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GREEK BRONZES

GREEK BRONZES

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Translated by

KATHERINE WATSON



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Plate XVIII

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Plate XIX

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Plate XX

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Plate XXI

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Plate XXII

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Plate XXIII

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Plate XXV

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Plate XXVII

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- 4 CHAINED NEGRO. Egypt. Alexandrian art. 2nd century B.C. Ht.: 13.2 cms. (*Louvre - Photo: Chuzeville.*) Cf. p. 127.

Plate XXVIII

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Plate XXIX

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- 2 ALEXANDER BALAS AS HERAKLES. 2nd century B.C. Ht.: 21.5 cms. (*de Clercq Collection - Photo: Séarl.*) Cf. p. 134.
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Plate XXXII

- 1 BATHER FROM VERRIA. Hollow casting. The missing arms were separately cast. The statuette is not, as was thought, of the 5th century, but 3rd century B.C. Ht.: 25 cms. (*Munich Museum - Museum photograph.*) Cf. p. 134.
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INTRODUCTION

PROBABLY not many visitors to museums, even those with a special feeling for Greek art, are attracted to the bronzes. The spacious galleries containing marble statues have an immediate appeal; but without preparation, concentration and perseverance it is impossible to know the real enjoyment to be derived from the delightful and varied pieces in the austere case-filled rooms of bronzes. Some museums have adopted the policy of mixing the types of object displayed in each room, in the hope of making all the different forms of Greek art accessible to the general public, and beside the marble statues and reliefs they place cases containing painted vases, terra cotta and bronzes. This policy will be briefly discussed in the last chapter of this book. Generally however bronzes are displayed separately, and perhaps this isolation has its advantages. Connoisseurs, students and art lovers wanting more information, for whom this book is written, are already acquainted with the richness of the miniature world of Greek bronzes, and they will find increasingly deep enjoyment in it. In Greece the art of bronze work embraced every facet of life from the humblest domestic activities, through the most elegant ornament to the height of religion. Every art form and almost every invention and technical process in the arts and crafts were reflected in it.

This book can only show a limited choice from the finest and most characteristic pieces, and aims at giving the truest picture possible of Greek bronze production. The author had first hoped to include Etruscan and Roman bronzes, but this would have meant ignoring too many facets of some or all groups. Thus it has

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been decided to devote another volume to Etruscan bronzes, whose quality and variety have recently been recognized in exhibitions and research, and to Roman bronzes which deserve to be better known and appreciated.

The present work is devoted almost entirely to statuettes and plastic ornamentation on 'implements' in the widest sense of the word, including armour and various utensils. There is not sufficient space to study the objects whose interest lies in their use and form, but are not directly works of art. On the other hand we can only mention in passing the few pieces of large sculpture which survive in bronze. They need an exhaustive study of their own if we are to benefit properly from examining them; furthermore the format of this book is not suited to the reproduction of monumental works, which by their size, quite apart from their extreme rarity, do not recommend themselves to collectors.

We have made an exception for the Apollo of Piombino, who has indeed had the modesty to remain under lifesize. This book, written in Paris in the atmosphere of the Louvre, could not but adopt him as its patron.

Part I

Generalities and Techniques

CHAPTER ONE

TECHNIQUES OF BRONZE WORKING

THE peoples of the Aegean first learned the use of bronze in the second half of the third millennium B.C. The knowledge spread and assumed real importance in the early centuries of the second millennium, particularly in Crete and, a little later, at Mycenae and among the peoples under its cultural influence. The knowledge was lost at the time of the Dorian invasions and after these dark ages the Greeks had to relearn how to work the metal from examples coming from the East (Cyprus and Phoenicia) and from Egypt.

Ores and alloys

The nearest copper ores available to the Aegeans and Greeks were to be found in some of the Cyclades, in Euboea and above all in Cyprus. When, during the first millennium B.C., commercial relations spread westwards, the mines of the Iberian peninsula provided a supply of metal which gradually came to surpass all others in importance. The Phoenicians and Carthaginians were the first to exploit the mineral riches of Spain and Portugal and they, too, first brought tin from the British Isles – the ‘Cassiterides’ of Herodotus. Tin was later transported by land, as Diodorus recounts. The convoys of chariots and beasts of burden from the Channel first crossed the Alps into Italy. This, perhaps, is the reason for the extraordinary finds of Archaic bronzes in the region of Châtillon-sur-Seine; the rich Celtic city established there lay on the tin route leading to Switzerland and Italy, and was thus in contact with the great centres of commerce and of the

bronze industry in Etruria and in Magna Graecia, and perhaps even in metropolitan Greece. It is known that later, after the establishment of the Romans in Gaul, the convoys went down the Rhône valley to the ports of Narbonne and Marseilles.

The importance of the tin trade derives from the relative rarity of the metal and the distance of the mines from which it was extracted. Other metals too were used as alloys with copper to make some bronzes in ancient times – particularly lead and zinc. Lead is already found in many Greek alloys, especially in coins, but in small quantities; it was more widely used in Roman alloys. Kluge considers that the presence of lead in bronze for sculpture makes cold working easier. This, as we shall see later, was the most important technique in ancient times. Zinc does not seem to have been used before the Roman period, when in large measure, if not entirely, it replaced tin, particularly in the manufacture of bronze vessels.

The information contained in the writings of the Elder Pliny on the composition of antique bronzes is unfortunately either vague or quite mistaken: his account of the three kinds of Corinthian bronze which were particularly appreciated by Roman connoisseurs is based merely on appearances or on an erroneous tradition. The supposed presence of gold or silver, or both, in an equal or greater proportion than the copper in the Corinthian alloys is not at all confirmed by modern analyses. These reveal, with very rare exceptions, only the minutest traces of precious metals in Greek bronzes, whatever their origin. New analyses may show the presence of silver or even of gold in some antique bronzes as something other than impurities in the copper; but a metal cannot be considered true bronze unless it contains a proportion of copper approaching or exceeding eighty per cent. If the proportion of gold or silver exceeds that of copper the alloy is not bronze, but an economical substitute for the precious metal. The alloy of copper and silver has the double advantage of being easy to cast and of preserving the colour of silver with copper amounting to as much as thirty per cent.

A few antique bronzes, mainly from Egypt and Assyria, contain a small quantity of iron; but this is probably an impurity in

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the copper, for iron is not normally alloyed with copper. 'The artist Aristonidas,' says Pliny, 'wishing to express the remorse felt by Athamas after he had slain his son Learchos in an attack of fury, alloyed the copper with iron so that the iron rust, appearing through the lustre of the copper, should express the redness of shame.' Pliny's explanation of the redness of the bronze is certainly false; the colouring of the face of Athamas is due to a patina caused by the formation of cuprous oxide, known as red oxide. It is certain however that the Ancient Greeks set different values on bronzes coming from different places (Corinth, Delos, Aegina, the Campania, etc.) both according to the method of manufacture and to the quality of the alloys.

A large number of analyses of antique bronzes is much to be desired, for at present there are very few available. They could provide the foundation for classifying bronzes and elucidating problems of origin or style. The number of results obtained so far is small because chemical analysis requires a piece of metal to be removed from the object itself, and even where the removal would go unnoticed one hesitates to damage it. Fortunately it is now becoming possible to use methods of analysis which do not destroy the object in any way, though at present these are still very expensive or can be carried out only in a few specialized laboratories.

One such method is examination by spectrography and radio-crystallography. It was applied to the analysis of two nails, one from the submarine excavations at Mahdia, the other from submarine excavations at Antheor. The analysis showed the same composition in both nails: about 98.5% copper, 0.5% silicon, 0.5% magnesium, 0.5% iron, traces of silver and very slight traces of aluminium. This is not an alloy, but a remarkably well purified copper. Analyses of this kind, if carried out in quantity, could give useful information as to the source of the ore utilized (in the present instance an ore from the Iberian peninsula) and perhaps, by comparison with dated metal objects, some indications for chronology also.

Another method tried recently uses the techniques of nuclear physics. Neutrons can give qualitative analyses and gamma rays

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quantitative. The results seem to lack precision (for example a Roman bronze statuette has a report of copper content 'in the order of 85%'); but gamma rays, with their great penetration, have a further use, since they can provide radiographs of the internal structure of some objects.

From the analyses already available it can be seen that composition is varied according to the kind of object to be made from the alloy. Generally speaking, an alloy of copper and tin increases in strength up to fifteen per cent of tin and decreases after that. Kluge distinguishes three main types of alloy: bronze for mirrors, for money and for sculpture. The first must be bright and does not need great strength, and thus the proportion of copper is greatly reduced in favour of tin; analyses give from 62 to 71% copper, from 23 to 32% tin, and from 5 to 7% lead. For coin, hardness is the prime factor and the metal must therefore contain a large proportion of copper. As the following table (taken from Kluge) shows, the composition of monetary bronze varied considerably in the Greek world; in the Roman period an important innovation was the introduction of a large proportion of zinc or lead.

	<i>Copper</i>	<i>Tin</i>	<i>Zinc</i>	<i>Lead</i>	<i>Iron</i>
	%	%	%	%	%
Ancient Attic coins	88.5	10	—	1.5	—
Alexander the Great	86.8	10.3	—	2.3	—
Hiero I	94.2	5.5	—	—	0.3
Trajan	88.6	1.8	7.6	2.2	0.3
Commodus	88.1	4.7	—	7.2	—

For statuary bronze strength is the first desideratum, but the metal must also lend itself to cold working; this is facilitated by the addition of lead to tin in the alloy. We have least information on statuary bronze, here our main concern. Alloys evidently varied considerably according to time and place, and, including vessels, instruments and weapons in the category of statuary bronze, it would be valuable to know the differences in composition that existed in the same place of manufacture and at the same

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date between the different kinds of objects manufactured; these we are at present far from being able to estimate.

We are not even sure that the few analyses available are all valid. It is essential that the specimen of bronze to be analysed be taken from the pure metal and not from the surface, which may have decomposed and become contaminated with foreign matter. Here is a typical example. Two specimens were taken from the statue of the *Marathon boy*: one from the dark and shiny metal crust of the surface, and one from the metal of the interior. Chemical analysis gave for the crust 89.6% copper, 7.6% tin and 4.2% sulphur, and for the bronze itself 88.5% copper, 9.2% tin and 2% sulphur. We will discuss later, when dealing with patina, the interpretation proposed for this difference of composition; here it is sufficient to say that this example must make us extremely wary of analyses unless we know the circumstances of the test. An example of instructive and carefully conducted analysis is the series carried out on the *Vix Treasure*.

Attention has been drawn to the high proportion of copper in the Troy II (c. 2,000 B.C.) axes; a proportion which theoretically would yield a soft metal, needing hammering to acquire some hardness. An Italian technician, B. Bearzi, has, however, recently come round to the idea that some process other than hammering, and unknown to us today, was used by the Etruscans for hardening bronze. There are, he says, many Etruscan bronzes of the very hard metal suitable for forging which was used for armour and shields. The question remains open.

Techniques for shaping bronze

Two techniques, both still in use, were practised in antiquity to shape metal objects: hammering and casting.

1. *Hammering*. Hammering is essentially the technique for bronze vessels; it is practised either on metal bars or on plates of various thicknesses, the largest and most regular being probably obtained by rolling. The large vases found in the sixth and fifth century Etruscan tombs were made from bronze plaques over

two metres long. The quality of Archaic Greek or Etruscan work can be gauged from the details of the bowl of the great *Vix Krater* (Châtillon-sur-Seine). Its total height is 165 cm., and the bowl is formed from a sheet of hammered bronze, 4 metres long, only 1.5 mm. thick at the base which supports a neck of cast bronze weighing 135 kg., together with the two handles, the reliefs and the lid.

Besides its employment on vases, implements or arms, the hammering technique was used to make statuettes and statues, and for this there were several methods. The most primitive and the simplest, like children's paper cut-outs, consists in cutting out on a sheet of metal, either a silhouette which will remain flat or, like a spread skin, the body of an animal with head, four limbs and tail; then the cut-out is folded down the middle and the head, paws and tail are hammered to the correct shape. Another method, implying greater technical skill, consists in working a bar of bronze by hammering and cutting to take the form of an animal or human being; we shall see when we study bronze craft of the Geometric period what strange forms emerged from this artisan work.

An improved method of shaping is that which the Greeks called 'sphyrelaton'. It consists in covering a wooden core (statue or statuette) with metal leaf, fixed by rivets. Dreros in Crete has yielded several specimens of this technique which was probably abandoned at the end of the seventh century; it left a legacy in chryselephantine sculpture, and, if the supposition is correct, in the use of a wooden core for large-scale castings.

The most expert technique is repoussé, which is used to this day: the metal is worked from the inside instead of the outside, except for final details of engraving or chasing.

2. *Casting*. Little is known of the methods of bronze casting in antiquity. Kluge has done more research on this subject than any, and his conclusion is that the modern technique differs from the ancient, and that so completely that any reference to modern practice is misleading. The greatest gaps in our knowledge are concerning the methods used for large bronzes which still today

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require a considerable degree of experience and technical ability to manufacture.

Solid casting and hollow casting by *cire perdue* had both been practised in Mesopotamia and in Egypt. Solid casting at any rate was known to the Minoans: the model was a wax figure encased in a mould of fire-clay, inside which, on melting, it was replaced by the molten metal. This method of casting could only be used for small figures because of the weight and cost of the metal, and also because in a larger statue the differences in thickness between the various parts of the body would cause inequalities of contraction in cooling which would split the metal. A *flute player* discovered in Samos, dating from the middle of the sixth century (Pl. XVIII, 1.), is one of the largest known specimens of solid casting: its height is 42 cm.

The origins of hollow casting among the Greeks are quite obscure. Kluge and Lehmann-Hartleben have devoted much research to this problem, and they distinguish three phases in the development of bronze casting in Greece. Their first phase corresponds to the ancient traditions which attribute the invention of bronze casting to the Samians Rhoecos and Theodoros. These two sculptors, living in the middle of the seventh century B.C., were said to be the first to cast statues, perhaps of quite large dimensions, using this technique, previously used only on small statuettes, instead of *sphyrelaton*. The second phase begins in the second half of the sixth century: the Aeginians had then invented for bronze sculpture a method of hollow casting different from *cire perdue*. This latter was not perfected until about the middle of the fifth century, perhaps by Phidias: and this constitutes the third phase. This systematization has the advantage of reconciling traditional history, known chiefly from Pausanias and Pliny the Elder, with what has been observed on a number of antique bronzes; none the less there are several serious objections to be raised against such an excessively logical interpretation.

For the first phase the classification can be accepted, although no archaeological discovery has yet confirmed the tradition that there were archaic statues of solid bronze: Pausanias quotes one of Dionysos at Thebes. But hollow casting is known as early as

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the seventh century from a head in the Museum of Karlsruhe (Ht. 85 cm.) which seems to have been cast by *cire perdue*, two centuries before Phidias. From a century later, about 540, we have another example of hollow casting in a *Head of a Young Man* from Sparta, now in the Boston Museum; the large statuette to which it belonged must have measured between 52 cm. and 55 cm. Another excellent Archaic specimen comes from Cyprus: a head of a *woman wearing the polos* (Ht. 107 cm.) which is probably no later than the seventh century, and is now in the Louvre (Pl. VI, 2).

It must then be allowed that hollow casting, probably by *cire perdue*, was practised at different places in the Greek world since the middle of the seventh century, for large statuettes at least. The difficulty of making full-size statues will have stimulated the invention of a method of casting in sand which was conjectured first by Collignon (*Sculpture Grecque*, I, p. 157, *seq.*), and then hypothetically reconstituted by Kluge and attributed to the Aeginian sculptors. The discovery at Olympia in 1937 of the remains of a kiln and a trench for casting statues allowed the German expert, himself a bronze smith, to work out how the operation was carried out. There was no real workshop at this place, but an open air installation. Sand and clay, the two essential materials, were within convenient reach of the site.

The data of the excavation can be supplemented by the decoration on several Greek vases, chiefly the *Foundry Cup* in the Berlin Museum (Fig. 1a). The installation consisted of a tall oven of brick and baked clay, inside which layers of copper ingots alternated with layers of charcoal; at the top was a container with the metal for the alloy (tin, and later lead) which was added immediately before the casting. The fire was quickened with several pairs of bellows, like those worked by Hephaistos on the frieze of the Treasury of Siphnos at Delphi, to give a continuous draught. The molten metal was carried by a duct to the brick-lined trench containing, embedded in sand, the mould of the statue and its core. The flow of metal ran into a pipe which divided into branches connecting with the mould; other branched pipes running from the mould carried out the air displaced by the metal.

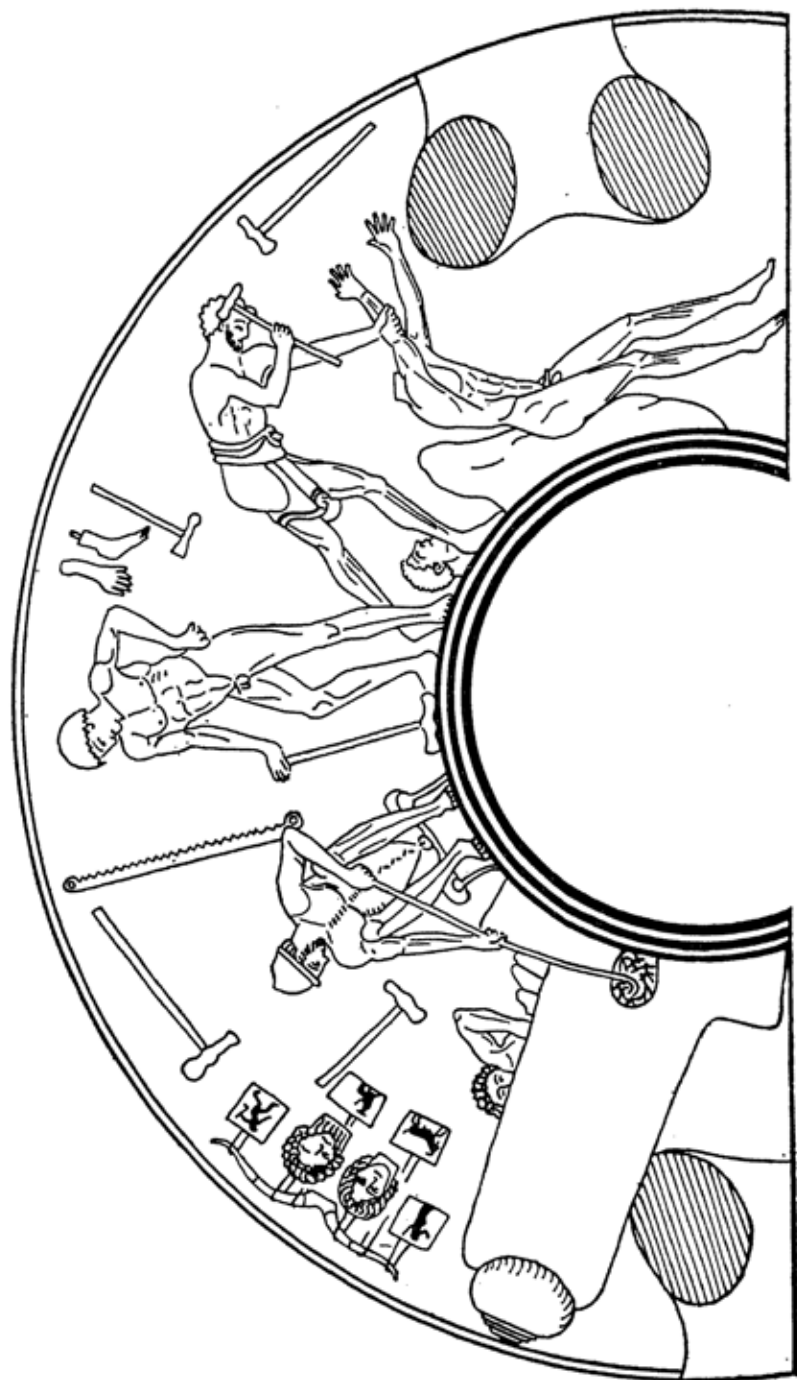


Fig. 1a. *Fondry Cup*. Berlin Museum. The furnace; fitting the limbs.

The most difficult question is the constitution of the mould and the core and the method of introducing the metal between them. Kluge rejects the hypothesis of *cire perdue* because Archaic castings are so thick and irregular and the inside hollow does not correspond in shape to the outer contour. He suggests the following procedure: the sculptor first makes a model, not in wax as for solid casting, but in wood. This is then cut into several pieces, or at least the protruding parts are removed; each part is moulded in refractory earth, then removed after the mould is dry. Into this mould a smaller core of refractory material is placed, held by iron stays; its contours only follow roughly those of the mould, leaving a space of uneven width to be filled by the metal. The material used for moulding the outer surface of the statue is plastic clay and a refractory mass of fine sand or powdered brick into which hairs or chopped straw are mixed to prevent cracking when the mould dries out.

The mould is placed in the trench with its core and its channels for bringing in the metal and letting out the air, and packed round with sand. After casting, when the metal has cooled, the mould and its contents are unearthed and the bronze removed by breaking the mould and cutting the iron stays holding the core.

This being a technical question the authority of Kluge as a technician weighs heavily in favour of his solution: but it cannot be considered as established. The hypothesis of the wooden model rests on a few pieces of evidence from antiquity, particularly Pausanias' statement to the effect that the *Apollo Ismenios* at Thebes was a replica in wood of the bronze *Apollo of Didymes* at Kanachos. The argument is not decisive: there were probably replicas of bronzes in marble and of marbles in bronze as early as this; there is definite proof of it for the fourth century at least. Nor is wood necessarily the closest approximation to metal for the sculptor; Kluge elsewhere and with greater justification says the same thing of wax.

The method of *cire perdue* was used by the Mesopotamians and the Egyptians for hollow casting on a fairly large scale, and by the Greeks themselves in the seventh century, not only for solid casting but apparently, as we have seen, for quite sizeable hollow

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castings. One cannot help wondering why it should have been abandoned in the second half of the sixth century in favour of a much lengthier and more complicated process. Kluge thinks that *cire perdue* casting was not at first used in Greece for large bronzes because it needs special furnaces: the whole of the refractory coating round the model has to be made red hot; yet he has suggested just such a dividing up of the model as would meet the difficulties of heating. The thickness and irregularity of hollow Archaic bronzes might be explained in the same way as the Egyptian Sait bronzes, by lack of experience and the desire to strengthen the more prominent parts of the statue.

At all events the surviving number of large bronzes which can have been made by casting in sand is small. After the beginning of the fifth century large statuettes like the Etruscan *Javelin thrower* in the Louvre and statues like the *Piombino Apollo* were made by *cire perdue*. We shall have occasion to return in Part 2 to this point and to examine some Archaic and pre-Classical pieces with technical peculiarities.

We are not able to reconstitute in detail the antique method of *cire perdue*. Its development was given a decisive step forward by Phidias, if we are to believe the tradition quoted by Pliny. The principles of the method are, however, familiar to us. The essential peculiarity of Classical Greek casting which gave it its unique quality is that the casting is made on to the model itself: on to a positive core and not into a negative mould; the model is used only once, and is destroyed by the casting.

The sculptor models the figure in clay on a rigid armature. This is to be the core of the statue and must be dried and perhaps baked before the second stage. The second stage consists in covering the sculptured model with a coating of wax which takes the definitive form to be given to the metal. Regularity in thickness ensures the homogeneity of the casting; the best of the large Greek bronzes have quite a thin and regular wall scarcely exceeding a maximum thickness of 1 cm., with a variation of only a few millimetres. Where there are significant differences of thickness they are evidently calculated: for example on the *Charioteer of Delphi* which M. Chamoux has shown to be cast by *cire perdue*

(not in sand, as Kluge said) the large folds of the tunic have a thickness of 25 mm. (as against 8 to 13 in other parts) to make the statue strong and steady. It was made in seven main pieces (head, trunk, lower body, two arms and two feet).

The foundry installation for casting by *cire perdue* cannot have been very different from that reconstituted by Kluge from the vestiges discovered at Olympia, which he considered were intended for Archaic sand casting.

The Ancient Greeks certainly practised the method of *cire perdue* casting on the negative, the method used by the Japanese and by European bronzesmiths of the Renaissance. A mould is taken from a definitive model prepared by the sculptor. Then either wax is melted and run into the mould (which makes its thickness difficult to control) or the hollow is brushed with hot wax which can then be modelled and pressed by hand. In this way the original model is preserved and can be re-used. At what period this method was introduced is not known. A careful examination of bronzes of known dates and with their insides visible might suggest the answer. The Greeks, like the Etruscans, were already familiar in the Archaic period with large scale moulds for terra cottas and thus may quite soon have thought of applying the idea to bronze statuary. Pliny attributes to Lysistratos, the brother of Lysippus, the invention of making a mould round the positive, and some have thought this sufficient evidence to decide the date of its introduction; but it should also be remembered that at about that time the ex-voto of the Thessalian princes at Delphi was composed of marble statues reproducing bronze originals, executed in part by Lysippus and dedicated at Pharsalus. If casting from the negative was already being used for statuary it would surely have been simpler and more economical to make a second casting for Delphi of the Pharsalus group.

We know that even for small pieces of solid casting like ornaments for furniture, vase handles, etc., both Greeks and Etruscans avoided repeating the same model. There is little evidence of the re-use of a mould other than a few votive animal figurines and Etruscan cist feet with plastic decoration. The use of partial moulds, which combined mechanical reproduction with free-

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hand treatment on the wax of the part of the model not moulded, spread somewhat in the Hellenistic period, though it remained restricted: it is proven for vessels and jewellery by the discovery of stone moulds, chiefly in Egypt (alabaster, lithographic stone, schist, etc.), and of plaster moulds and models. Stone moulds were, however, not directly used for casting, except for lead: E. Pernice has proved experimentally that they would have been destroyed by the molten metal. They were used for shaping wax models.

There is in the Louvre an example, rare for the Hellenistic period from which they date, of two identical statuettes hollow-cast by *cire perdue* from the same negative. The model presumably represented the *Cerynian Hind*, for the body is silver and the paws bronze. One of the pieces was acquired by the Louvre in 1899 and came from Syria, the other was acquired in 1950 and came from the Dordogne. There is no doubt about the authenticity of either piece; the second is more perfect and better preserved and was found by chance near some Roman ruins, covered by a hard chalk crust. The paws of course and the head and tail had been cast separately. The exact agreement of dimensions, of pose and forms and particularly the very fine detail of the fur allows no doubt that the two statuettes came from the same mould.

Cire perdue casting on the negative was certainly much used for statuary in the Roman period. The majority of large Roman statues, especially portraits, were probably cast in this way although the method used in the Classical period involving the loss of the model was still employed. More than one mould was used for each statue: ten were used for one of the *horses of St. Marks* in Venice, apart from the harness.

It is comparatively easy to recognize bronzes cast by this method if the inside can be seen clearly. If the wax has simply been poured into the hollow the inside wall of the metal retains the smooth appearance of wax, except of course for the rough projections made by fissures on the core; if the wax has been brushed on and then pressed by hand it should be possible to see the brush marks or finger impressions. When the cast is made by *cire perdue* on a positive and the model is destroyed, the metal, like the wax, is

modelled in reverse on the clay of the core and assumes the appearance of clay. It was the same in Roman sand casting, with the difference that there the wall is thicker and has a rougher inner surface.

Kluge concluded from his researches that the Romans used sand casting, but followed a rather different method from the modern one. In the latter an impression is taken from the model in two sand moulds, a lower and an upper, the projecting parts being separately moulded. The model is then replaced in the hollow by a core with a wire skeleton; it is moulded and then reduced in size by the required thickness of metal. This core is held in suspension inside the mould by stays. A mechanically exact reproduction is thus obtained.

In antiquity, much more importance was attached to cold-working (which is not used at all in the modern method) than to the casting. Kluge quotes as a characteristic example a *Medusa Head* decorating a beam end on a ship on Lake Nemi. A plaster model, probably very summary, had been cut up and each part – curls of hair, serpents, pinions, mask – moulded in sand; cores approximating to the shape of the parts were substituted for the model, leaving a space for the metal round them. The result is a thick casting showing plainly where the separated elements join; it can be seen where the curls meet the brow and cheeks of the Medusa. All the detail (drawing of the feathers, grooves of the curls, hairs of the eyebrows, etc.) has been touched up or even directly worked cold. The same process was used in reproducing some of the masterpieces of Greek sculpture, notably several busts from Herculaneum in the Naples Museum; the most characteristic example is the copy of Phidias' *Amazon*, where the junction between the separately cast hair and face is particularly harsh. The whole surface has been worked over with file and chisel on the thick metal in the stiff and mechanical manner of pointing. Other busts, such as the *Dionysos wearing a Mitra*, also from Herculaneum, show more careful chiselling; but however high the technical quality, this cold working, free and lifeless at the same time, has neither the value of an exact reproduction nor the vitality of an original.



c Fig. 1b. *Foundry Cup*. Berlin Museum. Polishing the statue.

3. *Cold Working*. From the above references to cold chiselling it can be seen how important was the work of touching up and finishing – no longer practised in modern times. Nowadays a positive pleasure is taken in the picturesque effect of the irregularities on the surface and inequalities of artificial patina: nothing could be further from the conception of bronze-working in antiquity.

The first object of cold working is to repair the faults of casting after removing the props of the core.

A metal surface after casting always looks to some extent porous, crusty and non-metallic. This 'skin' is removed first by filing, relatively little used in antiquity, and then with a kind of scraper: the form of this tool is like a knife with curved blade, or the strigil used by athletes to take off the oil they rubbed on themselves before their practice. The traces of the file were nearly always removed by the scraper, chisel or polisher. When they are clearly visible the work is immediately suspect as modern, either a restoration or a fake.

The *Foundry Cup* (Fig. 1b) in the Berlin Museum shows two workmen scraping the legs of a large statue of a warrior. The scraping was followed by polishing: work of some delicacy, for the shine must be adapted to the form, avoiding too uniform and mechanical a polish. The bronze was smoothed with soft fine-grained stone or with cuttle-bone.

Real faults in the casting were due to irregularities in the alloy, or to insufficient or excessive fusion, or to inequalities of thickness in the metal.

Some castings are very porous – almost all are porous to some degree; parts of the bronze appear riddled with small holes. This fault, due to excessive heat in fusion, sometimes affects pieces of superb quality, such as the *Young Woman in Prayer*, previously called the *Spinner*, in the Berlin Museum (Pl. XII, 4).

Almost all antique bronzes have cracks brought about by lack of elasticity in the metal. These cracks have sharp edges, quite distinct from the rounded edges of crevices caused when cooling stops the flow of metal. Cracks were not always repaired; crevices usually occurred when the bronze was touched up after casting,

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and unrepaired crevices raise doubt as to the authenticity of a piece. All castings had blow-holes or incrustated scoriae in the metal which left a hole in the surface when removed.

The work of making good consisted first in regularizing the shape of these flaws in the metal; the cavities left by this work, generally rectangular, were filled either by inserting a piece of bronze plate according to the method of inlay which will be dealt with later, or, in the case of a narrow slit, by forcing in a small triangular plate, pulling it in from the inside with pincers; the metal left proud on the outside was flattened, filed and polished so as to make the repair invisible; inside, the points remained protruding or were beaten back against the surface.

Pores were a different matter. On some bronzes they were filled with infinite care with tiny millimetre-sized plates, but very often the sculptor left them open, resigning himself to the characteristic look of the hosts of little pock marks.

The finishing of the surface, scraping, polishing, making good, is artisan's work; the artist undertook the chiselling which gave the bronze its definitive look and form. The two most important instruments used by the chiseller are chisel and graver. The essential difference between them is that the chisel has a cutting edge, generally straight, sometimes curved in great varieties of widths and sharpnesses, whereas the graver ends in a point, again varying greatly in size and sharpness.

The chisel is the sculptor's tool *par excellence*, through which he makes the mark of his personality, his own style. It corrects the modelling, giving precision and perfection to the joints of the body or the folds of drapery. The graver is the carver's or engraver's tool; it is, like the chisel, of hard iron; but unlike the chisel it is not pushed by the hammer, it is worked by hand. The artist's hand leaves its personal mark as it manipulates the graver, and this can in doubtful cases assist in a problem of authenticity: the graver must not penetrate the metal vertically; the grooves it makes begin and end obliquely, normally describing a curve which follows the natural movement of the hand. It was used for drawing very fine lines, for details of the hair, eyebrows, beards and decorative elements.

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In the following chapters examples will be quoted showing the use of these tools.

4. *Added pieces: Inlay, Gilding.* The Greeks liked to cover or enhance their buildings and sculptures with bright colours. They enjoyed combining different materials: chryselephantine sculpture is the most striking example of this. We know that the Parthenon friezes, among others, were covered with metal accessories. Bronzes, too, were made more life-like and more richly brilliant by the addition of supplementary pieces.

The first element of colour, the most essential, is the metal itself. Although Pliny's remarks on this (*Hist. Nat.* xxiv, 94 *et seq.*) are insufficient and inexact they show the interest and value bestowed on diversity of alloy by the Ancient Greeks. If Myron, as tradition has it, preferred the bronze of Aegina and Polyclitus the bronze of Delos, one may surmise that it was as much the colour which determined their choice as the plastic qualities of the alloy; and Pliny's descriptions of the different kinds of Corinthian bronzes showed that variations of alloy aimed at producing variations in colour.

Next come supplementary pieces of bronze which was beaten and not cast, thus giving a modification to the colour even if the metal was of similar composition. The classic example is that of the narrow bands of cut bronze forming eyelashes round the eyeballs: several specimens were found at Delphi. Other examples are the belt of the *Charioteer of Delphi* and the fawn-skin of a small *Bacchus* from Pompeii.

Attachments might be of different metal or a different material altogether: Hellenistic or possibly Roman statuettes of Aphrodite have been discovered still adorned with bracelets or necklaces in silver and gold, sometimes decorated with pearls or precious stones. The eyeball is the most important of these additions since it contributes more than anything else to the animation of the statue and is not merely a decorative element. Various techniques and different materials were employed to increase or vary the effect of the eye.

In statues and large statuettes separate eyeballs were inserted

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into cavities made for them. This is probably why the calva was generally cast separately. The inserted eyes, which have now unfortunately almost all disappeared, were made from a block of white material (marble, stone, shell, ivory, etc.) into which the iris and pupil of different materials were inlaid (rock crystal, coloured stones, glass, enamel). This was the custom from the seventh century onwards: the large statuettes of Dreros made of hammered bronze (sphyrelaton) have hollow orbits, like the *Karlsruhe female head* and *Cyprus head* in the Louvre (Pl. VI, 2).

The other technique, an inherent part of metal work, is inlay: it was employed chiefly for statuettes since it naturally is best adapted to solid casting. The surface of the eyeball was cast in a piece with the statuette, then hollowed out with a chisel to allow inlay of a piece of silver leaf, itself cut out in the centre for the insertion of the pupil.

In the majority of Greek and Roman statuettes and in many of the large Roman bronzes the eyes were neither attached nor inlaid. But there is a partial treatment of the eye found on several large Roman bronzes: the eyeball is cast with the head, but has a central cavity evidently intended for the insertion of a pupil of a different material. It might be argued that this pupil of enamel, glass or coloured stone was set into an eyeball the natural colour of bronze, but it seems more normal and closer to antique taste to suppose that the eyeball would be painted white. We should thus have reason for thinking that in some cases and for some (probably very small) parts, coloured paint was used for touching up.

Inlay was not used only for the eyes. Since the Archaic period the most carefully worked statues and statuettes had inlay of copper for the lips and nipples. There are some special refinements: a silver thread may outline the lips, or separate them. For the inlay to hold fast the containing groove must be wider at its base than at the top, the hollow penetrating obliquely under the surface: the silver or copper leaf for inlaying must be thicker than the containing groove is deep, since it must be narrow enough to fit the opening at the top, but must spread at the bottom when pressed by the hammer.

Inlay of niello and enamel was rarely used on bronze and is dealt

with in a companion volume of this work (*Bijoux Antiques* by Étienne Coche de la Ferté).

A considerable number of antique bronzes were gilded, especially in the Roman period. By far the most usual method was leaf gilding. By heating the gold, the Ancient Greeks found it possible to obtain an extremely thin gold leaf. According to Pliny the gold sheets were stuck on to the bronze with mercury, but this is not so; he has confused it with mercury gilding. In fact the gold leaf is pressed directly on to the bronze and holds because of the porosity of the metal, helped usually by a preparation of the surface with fine incisions. The gold leaf becomes incorporated with the bronze: it cannot afterwards be removed without some part of the metal which it is gilding.

Examples of mercury gilding are rare. The process, favoured in the Merovingian period, is difficult to work and dangerous, since the mercury vapour is deadly. This kind of gilding is closer to painting than to metal appliqué; the alloy of gold and mercury is applied on to the bronze with a brush while hot. The thickness varies; if it is thick enough the effect is golden, if thin the bronze shows through.

5. *Patina*. The problem of patina, and whether bronzes were artificially patinated in antiquity, is a much discussed subject.

As early as 1896 Villenoisy wrote in the *Revue archéologique* against the supporters of artificial patination, pointing out how many Greek and Roman kitchen utensils with the humblest functions have a splendid patina. This argument is still valid, and others exist to support it.

First is the fact, historically proven as we have seen, that the Greeks and later the Romans appreciated the colour of bronze in itself and that they distinguished the different kinds of bronze according to colour (for example, the Corinthian bronzes with gold, silver or 'liver coloured' lights, the latter tending towards red). In a well-known passage, Dian Chrysostom compares the colour of the sunburnt body of an athlete to that of bronze.

Further, patina changes the nature of the metal and modifies its surface; thus it alters, veils or even sometimes hides completely

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the inlays and engraving which are of primary importance in antique sculpture. It is unlikely that the Greek bronzesmiths, so careful of detail and finish, should have reduced the effect of their work with artificial patina.

Lastly, it is known that various methods were used in ancient times to prevent the formation of patina. 'The Ancients,' said Pliny, 'coated their statues with bitumen, which makes it the more remarkable that they liked to gild them.' Pliny's astonishment is explained by the fact that gilding is an expensive method of preventing oxidation on bronze, and indeed it is, however thin, itself a sort of artificial patina, whereas bitumen, from which varnishes for this purpose are still extracted today, sufficed to protect the surface of the metal and preserve its lustre. Oil or resin were used for the same purpose. This treatment given to bronze statues, in some cases prescribed by administrative or religious laws, was the more necessary because patina only forms on polished metal.

Thus it remains extremely doubtful that the Greeks used artificial patina. We have spoken of the analyses of the *Marathon Bronze* given by Zenghelis where he considers as artificial patination a dark purple coating half a millimetre thick, separated on *some parts* from the bronze of the statue by a very thin layer of sand and limestone. In fact this 'coating' has the composition of bronze, differing little from the metal of the statue, which has only 1% less copper, 3% more tin and 2% less sulphur. Obviously a layer of molten bronze exposed to sulphurous gases could not be applied to the surface of the statue with a brush, and what are we to make of a layer of sand and chalk separating the metals only 'on some parts'?

Pliny's coating of pitch, furthermore, was not intended, as has been sometimes supposed, to patinate the statues but to facilitate the casting.

It is true, however, that the Greeks gradually abandoned their practice of preserving bronzes from oxidation and that the patina the bronzes assumed was appreciated, at least in Roman times; in the second century A.D. there is the evidence of Plutarch, who records a discussion at the sanctuary at Delphi between some

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visitors who were admiring the blueness of certain bronzes: one of the party wonders if the artists of the past treated the bronzes to give them this colour; but Plutarch concludes in favour of a natural patination. It is likely that the interest of Roman connoisseurs in certain natural patinas stimulated research into artificial patinas producing the same effect. Kluge cites as an example of such artificial patina the *Bust of Norbanus Sorex* in the Museum at Naples, which has a uniform blackish patina which he considers to be ancient. But this practice does not seem to have become general; the use of gilding, unknown to, or perhaps simply not appreciated by the Greeks before the Hellenistic period, but widespread in the Roman world, does not go with the use of artificial patinas.

Nearly all antique bronzes have a natural patina or are covered with a modern varnish; indeed almost always when this varnish is removed, as is done nowadays, the natural patina is found; it may be in either good or bad preservation. This subject will recur again when dealing with the conservation of bronzes.

The variations of colour and thickness in natural patina are enormous, depending both on the composition of the alloy and on the environment in which the bronze has been preserved. There has not yet been any methodical experimental research on this problem.

The origins of some bronzes can be recognized by their patina, in which case it is obvious that the composition of the earth where they have lain so long has determined it; the best example is the bronzes found at Dodona; their patina was acquired in the soil of the sanctuary; it is blue-grey, and delicate and uniform enough to show the details of engraving through its surface; it cannot be attributed to any local manufacture since the objects were brought to be offered to the God by pilgrims from all over the Greek world, and had been made in different workshops (Pl. XIX, 1 and 2).

VESSEL SHAPES AND 'IMPLEMENTS'

BEFORE starting our historical study of the styles of Greek bronzes – which will be devoted mainly to smaller statuary and reliefs – it is desirable to review the different kinds of 'implements' (in the wide sense of the word) which depend on bronze techniques. A large part, if not the majority, of the figurines and reliefs which will be studied in Part II were used to decorate implements and were adapted to the shapes suggested by them. These shapes remain comparatively stable; they evolved less than plastic styles, and for this reason it has seemed to make for greater clarity if they are studied separately or in homogeneous groups, rather than divided according to successive chronological periods.

'Implements' includes arms, chariot parts and harness, articles for games and toilet, vases and utensils, tools and professional gear. Only implements with figured decoration will be referred to. This decoration takes the form of figurines in the round serving as supports or handles, or placed on the rims of large vases, either appliqué when they are cast and in high relief, or worked in repoussé and then generally in low relief; or the ornament may be engraved or sometimes inlaid. The vase or other object for which the appliqué was made is not always easily identified.

This review is necessarily cursory, and since it has to cover such a vast collection of objects we will single out those with considerable ornament which form well classified series.

Arms

The offensive arms of the Greeks, unlike the Minoan and Mycenaean swords and daggers (see p. 76) seem not to have had real plastic ornament.

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Among surviving defensive armour are a few rare pieces with varying degrees of richness of decoration, but almost all of them belong to the Archaic period.

Body armour. There are only very few examples, all of the seventh century B.C. and of Cretan manufacture, showing that the three pieces of the cuirass—frontal, dorsal and abdominal (this latter, the *mitra*, being specifically Cretan)—might be covered with incised decoration with parts in low-relief repoussé, the designs comprising confronted animals and groups of human or divine figures. Leather cuirasses, which superseded the rigid ones after the Persian wars, had bronze shoulder-pieces which were sometimes decorated in relief with mythological scenes of two figures. Bronze cuirasses were manufactured in southern Italy, particularly in the Campania in the third century B.C. The back and front were decorated with a full face *Head of Athene* (Naples Museum; Musée du Bardo, Tunis).

Helmets. Decorated helmets are few and the best specimens are from the seventh century B.C. There are some examples from Crete with a rounded crown in two pieces joined by rivets without a nose piece, and each piece decorated in repoussé with a large motif of *Pegasus*, or *Europa on the Bull*. The most frequent is the 'Corinthian' helmet, which sometimes has a fine engraved design or even silver inlay; the cheek pieces may have a repoussé relief motif of a ram's head. Engraved or relief ornament is also known on helmets of Classical and Hellenistic date; some repoussé reliefs, probably for cheek pieces, have a technique and style closely similar to the reliefs on box mirrors (cf. p. 48).

Shields. Cretan round shields are in a category apart. Most of them were found in the cave of Ida and date from the eighth to seventh century B.C. They are the earliest and among the most remarkable examples of the oriental influence in Greek art. The decorative technique is like that on the Cretan helmets: relief either in repoussé or engraved, covering the whole surface. The



Fig. 2. Tympanon of Ida. Heracleion Museum. Master of the animals between two winged genii.

largest, which have a diameter between 50 and 70 cm., may have been used as defensive arms: the thin sheet of decorated bronze, rarely more than 1 mm. thick, was of course attached by nails or rivets to a wooden base covered with leather. Smaller shields were votive offerings; they may all have been used in sacred dances of the Cretan cult of Zeus. With the shields should be mentioned the most famous item in the find at Ida, a purely cult object, the *tympanon* on which is figured a god subduing animals resembling the Mesopotamian Gilgamesh, doubtless Zeus himself, accompanied by two winged spirits of Assyrian type (Fig. 2).

Most of the shields have a high relief of an animal's head in the centre, generally a lion; one of the earliest specimens seems to

have had the central boss in the form of an eagle's head, the body with its spread wings covering in low relief the greater part of the circle, among figures of sphinxes, lions and serpents. The graphic repertoire of Cretan shields includes a naked Babylonian goddess, mistress of wild animals, and hunting scenes, contests or rows of animals. These motifs are divided into concentric zones and are completed by purely ornamental features in characteristically oriental style.

Assyrian influence, through Phoenicia, is apparent in these compositions, especially in the oldest ones. None the less there is no doubt that the workmanship is Greek, adapting oriental procedures of technique and motifs to the taste and religious customs of Archaic Crete.

Judging by the many representations of warriors on vases and reliefs, the shields of the following centuries were frequently decorated with an apotropaic or symbolic device; several examples of these episemes were found at Olympia, cut out in bronze and worked in repoussé with the details of eagles or dolphins engraved with a graver.

Besides these, the excavations on the Acropolis and even more those on Olympus yielded bands with scenes in relief that decorated leather brassards. The way in which the brassard was riveted to the inside of the shield can be clearly seen on the relief figurines of warriors on the *Vix Krater* (Pl. III, 2). These bands were divided along the length into rectangular panels forming metopes with confronted animals or scenes of divinities or heroes with two, or sometimes three or four figures (Pl. III, 3). These reliefs were Corinthian. They were made by hammering on to matrices, and this type of decoration lasted from the end of the seventh century until about the middle of the fifth century B.C.

Lastly the stylized muscles on the *crenides* (leggings) make interesting plastic composition, apart from the decoration on the knee which sometimes occurs, generally with an apotropaic design (*Gorgoneion*) to ward off evil from this vulnerable region. In general it may be said that even when completely unornamented every piece of Greek armour is, by its form alone, a work of art.

Chariot and harness ornament

There is no relic of Greek chariots to correspond to the Etruscan chariot of Monteleone, which was made of plaques decorated with scenes in repoussé relief. The lattice-work chariots of Metropolitan Greece had some elements such as wheel- and pole-caps which were suitable for plastic decoration, like the later Roman examples. It is possible that some unidentified pieces of appliqué were used to decorate chariots. Horse harness had some decorated pieces, such as discs for bridles, bit ends in the form of stylized horses (especially in Italy) or protomes of horses, and open-work muzzles; more rarely protective pieces were decorated in relief with a helmeted head or Gorgoneion on the head-piece, or a *Sphinx with spread wings* (southern Italy, fifth century B.C., Karlsruhe Museum).

Mirrors

Three kinds of mirrors were used in the Greek world: hand mirrors, standing mirrors and box mirrors. Hand mirrors were used at least as early as the beginning of the sixth century and continued in use, in southern Italy, after the fifth century B.C. and even longer in the Etruscan zone; standing mirrors appear in the first half of the sixth century and disappear in the second half of the fifth century; box mirrors then supersede them and the finest examples with relief decoration are found between the end of the fifth century and the middle of the third century with some survivals in the Hellenistic and Roman periods.

Hand Mirrors. The simplest type, made in Peloponnesia, has a flat wide handle, cast in a single piece with the disc, and has no decoration. A Corinthian style, also with flat handle, derives from this, but the handle spreads at the top into a metope and has a medallion at the bottom. It is covered with a bronze sheet, soldered on with lead, which has repoussé relief in the same style as the bands decorating the armlets of shields: three motifs one above the other, for example a sphinx, a standing figure, and a

gorgon head or eagle (first half of sixth century). There is an attractive variant in the Louvre: a flattened figurine in profile representing *Athene*. This example represents the transition between the flat handle with relief decoration and the supporting statuette in the round, full face, but still considered as a handle, without a standing base. The first examples of the type are of the first half of the sixth century B.C. from Samos and Sparta.

When the statuette is fixed on to a base the handled mirror becomes a standing mirror, made to stand upright.

The less costly hand mirror continued in use until the second half of the fifth century. Sometimes the handle cast in one with the disc like the old Peloponnesian type has only simple decoration, a capital at the top and a palmette at the end; sometimes it is made in another material, such as wood or ivory, with either a tang cast in one with the disc for fitting the handle, or the handle may be made of two pieces, one of bronze in the form of a blade crowned with a capital bearing a siren, the other of ivory or wood as in the other type. The siren type may have originated in Attica but it was imitated in southern Italy. The workshop of Locris evolved a characteristically southern Italian hand mirror. It has a plaque between the handle and disc in open-work relief depicting one or more figures (Fig. 3); some motifs are distinctively local in character, in particular the monster *Scylla* (there is an example in the Louvre).

Standing Mirrors. The simplest type is probably the latest (fifth century) and resembles closely the 'siren' hand mirror, the handle proper being replaced by a small column on a base.

The finest examples have a figurine as support. These will be studied under the section on Archaic and Early Classical statuettes, leaving the base and disc to be discussed here.

The simplest base is a round plinth, with an S moulding. It is usually supported by three clawed feet (Fig. 4) a type used in the workshops of the northern Peloponnese. Some are triangular, like an example in the National Museum in Copenhagen; some rectangular, and in Copenhagen again there is a very ornate example of these supported by four busts of sirens on clawed feet. A special type from Sparta and Aegina is in the form of an



Fig. 3. Top of the stem of a mirror from Locris. Reggio Museum. Silenus and young man.

Egyptian footstool with four legs either straight or crossed, with horses' hoofs (Pl. xv). The most richly sculpted base is a slab supported by two winged horses (Corinth) or two foals (Athens) (Pl. iv, 1).

The disc, carefully polished on the front, is bordered by a ring of relief beads outside a band of engraved decoration, for instance a row of ovals and a braid. The best preserved pieces have in addition an edging of rosettes, or birds, or little full relief animals which seem to be chasing one another, such as dogs and hares and,

on the top, a siren with outstretched wings. The disc is placed on an attaching piece, generally decorated with engraved palmettes and cast in one with the caryatids; to complete the join two winged figures frame the top of the statuette; they are sphinx or sirens on the earliest examples (sixth century) and flying cherubs on those of the fifth century.

Box Mirrors. In the second half of the fifth century the standing mirror is superseded by the less clumsy and more easily portable box mirror. It is composed of the mirror disc, still cast, and its lid, which may be beaten or cast, and they are joined by a hinge to which the main handle is fixed; a smaller handle for opening the box is fitted on to the opposite side of the lid.

There were three types. The oldest, A, is only known by a few examples (end fifth to mid fourth century); the lid is hammered and only covers the polished part of the disc, the mirror proper, which, as in the other types, is slightly convex. The disc of type B which begins with the fourth century is polished almost all over, and has a raised edge into which the lid fits. The lid may be either hammered or cast and is slightly convex so as not to damage the mirror surface. The third type, C, appears a little later in the fourth century and forms the largest group. The lid, either cast or hammered (as were the latest ones), covers the disc completely (Fig. 5).

The disc and lid of each type were always turned after casting or shaping by the hammer. The lids of the box mirrors were decorated on the outside with repoussé relief, worked by hand, not on a mould, and soldered on with lead: the lead filling both strengthened the relief and stuck to the lid. The outline of the motif was shaped very freely in relation to the circular frame; sometimes the appliqué was not made for a mirror but taken from a vase or other utensil. A few pieces have the inside of the lid silvered and engraved; unfortunately, although the bronze surface was scratched to ensure the hold of the silver, the thin layer of brilliant metal is hardly ever found today in a good state of preservation (Pl. iv, 4).

As for the sources of box mirrors: it is likely that Corinth was



Fig. 4. *Standing mirror. Louvre.*

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by far the largest producer, mostly of types B and C. It may be that type A was Chalcidian metalwork, which was famous in Ancient Greece, but of which we have very little record. Recently, however, good cause has been shown to ascribe an Attic origin to them. So-called Chalcidian mirrors are distinguished by the slightly precious elegance of style and by the happy choice of motifs, suitable for the circular shape. About a dozen mirrors, four of which were found in southern Russia and one in Myrina, present another problem of origin. Zuchner suggests an indeterminate Ionian origin but the criteria are mainly stylistic and are not indisputable. There is on the other hand no doubt that box mirrors were manufactured in southern Italy: Tarentum seems the most likely centre. The choice of a subject such as *Scylla* belonging to Magna Graecia is characteristic (there is an example in Berlin). The Tarentine craftsmen imitated Corinthian models, though local taste is evident in their lesser attention to proportion, in the animation or even violence of movement, and in an overloading of the composition with ruffled draperies and other decorative elements.

The trade in box mirrors, like the trade in bronze vases with sculptured decoration, was largely dominated by the Corinthian bronze industry. Its products were of a remarkably high quality. There is no special originality of style: the Corinthian craftsmen borrowed most of their motifs from Attic paintings and reliefs; they imitated the work of famous artists whose compositions were not always suitable for fitting into a circle. The most typically Corinthian motif is a woman's head, either in profile or full or three quarter face, which is found on many lids of the fourth and third centuries B.C.; they have parallels on the coinage of the city. They demonstrate the variety and vivacity of the art of the second Classical age, sometimes wrongly considered academic: these faces have a healthy vigour, breathing gaiety and charm – a charm whose natural character is not impaired by discreet adornment and a few elaborations of coiffure. The 'melon' coiffure, it may be mentioned in passing, appears at the end of the fourth century and continues beyond the middle of the third.

Among the scenes reproduced on box mirrors the most popular



Fig. 5. Box Mirror. Type C.

is the cycle of Aphrodite and Eros: next comes Dionysos and his rout – including Pan; Herakles appears quite often, more in the role of lover than champion; in addition the repertoire includes love scenes or mythological abductions and a few rare fighting scenes. Generally the engraving on the inside of the lid bears some relation to the scene in relief on the outside.

About two hundred box mirrors or fragments of these exist now in public and private collections, some unpublished. It often happens that only the lid with its applied relief decoration has survived; more rarely the lid has lost its relief but the inner silvering with engraved decoration remains; lastly some separate reliefs, judging by their style and size, must have figured on box mirrors. The diameter of the mirrors varies between 0.8 and 2.5 cm.; the usual size is between 1.5 and 1.7 cm.

For dating box mirrors there are parallels with other series – coins, figures, monumental reliefs and funeral steles, and the paintings on vases. For example the *Aphrodite Pandemos* (on a mirror in the Louvre, Pl. iv, 2) has the 'gable end' hair style like those on Attic funereal steles about 360 B.C.; a nude *Nymph crouching* before a lustral basin (engraved design on a mirror in the British Museum) has a parallel in the paintings on Attic vases in the 'Kertsch' style, about 340–330 B.C.



Fig. 6. Tripod from Knossos. Heracleion Museum.

Tripods and cauldrons

Two types of tripod were used in Greece from pre-Hellenic times onwards. A fine specimen of the first type was found in the neighbourhood of Knossos (Crete) in a tomb dated to the beginning of the Late Minoan period (seventeenth century B.C.): it is a three-legged cauldron with two vertical ring handles; handles and legs are fixed to the bowl with rivets (Fig. 6). It is made by hammering. This type reappears in the Geometric period with its shape more balanced and harmonious and richly decorated with plastic ornament. It is interesting that in the Geometric period this vessel, like its Cretan predecessor, has the characteristic large circular handles. Some small examples of bronze or iron are made up from pieces of cast metal, but the largest and finest examples, which may reach up to nearly two metres in height, were made from hammered bronze sheets; three wide vertical legs, each made of three leaves of bronze and two vertical circu-

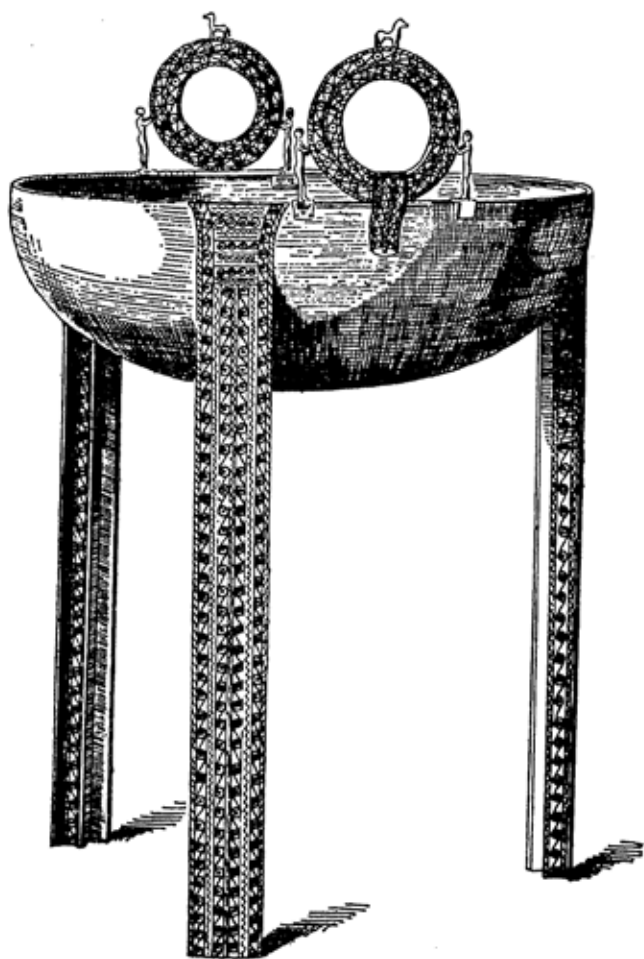


Fig. 7. Reconstructed *Geometric tripod*.

lar handles were fixed to the body with rivets (Fig. 7). The legs and handles are covered with incised decoration: zigzags and concentric circles joined obliquely by tangents, a motif derived by Geometric stylization from the joined spirals of the Cretomycenean repertoire. The plastic ornament was cast; it belongs to the series of Geometric statuettes already discussed: quadrupeds or birds placed on the handles, nudes placed on either side of the

handles. Some of these figures (there is a fine example in the Louvre) have a bull's head on a human body (Pl. x, 2). The majority of these tripods have been found at Olympia in fragments; other great sanctuaries, too, particularly Delphi and the Acropolis at Athens, have yielded important fragments.

The tripod with fixed cauldron was certainly used in Greece after the Geometric period, for it is reproduced on coins and vases in later centuries, but no specimens are known to have survived from later than the seventh century B.C.

In the second type the tripod support is separate, and casting, hammering and soldering are all used in its manufacture. Its origins are oriental and the few examples that have survived, about a dozen of them, were made in Cyprus between the thirteenth and eighth centuries B.C. A decorated circular band for holding the vessel rests on the capitals of the three legs and on the apex of the hoops connecting the legs; the shape of the hoops and the use of braided design make it almost certain that these metal utensils imitate basket work. There were, besides, tripods of similar form imported into Greece with their vessels from Urartian workshops about the end of the eighth century B.C.: tripods and vessels were both decorated with bulls' heads and the straight legs and the hoops of iron or bronze were inserted into bulls' feet. Some vessel handles were, at the same period, decorated with a winged siren motif, which was another import from the East. There are fine examples surviving from Delphi and Olympia. This oriental type of tripod was taken over in the seventh century by the workshops of Metropolitan Greece and southern Italy, and from there reached Etruria. The earliest Greek tripods had no ornament (apart from animal feet, with a clawed foot replacing the hoof) other than ducks' heads at the top of the vertical legs. In the second half of the sixth century the ornament became richer with palmettes on double volutes for capitals, and small animal or human figures round the circumference of the band. The basins or cauldrons held in these tripods were decorated with either four or six protomes of griffons riveted to the shoulder of the vessel. More than 180 of these have been counted, mostly from the excavations of the Heraion on Samos, others from

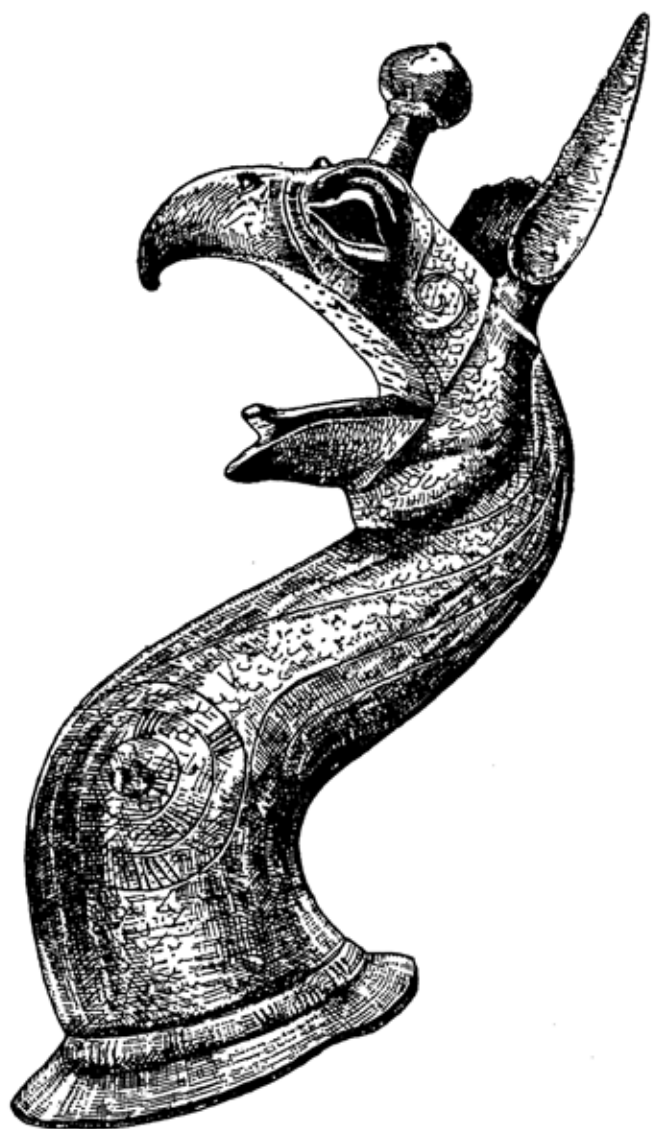
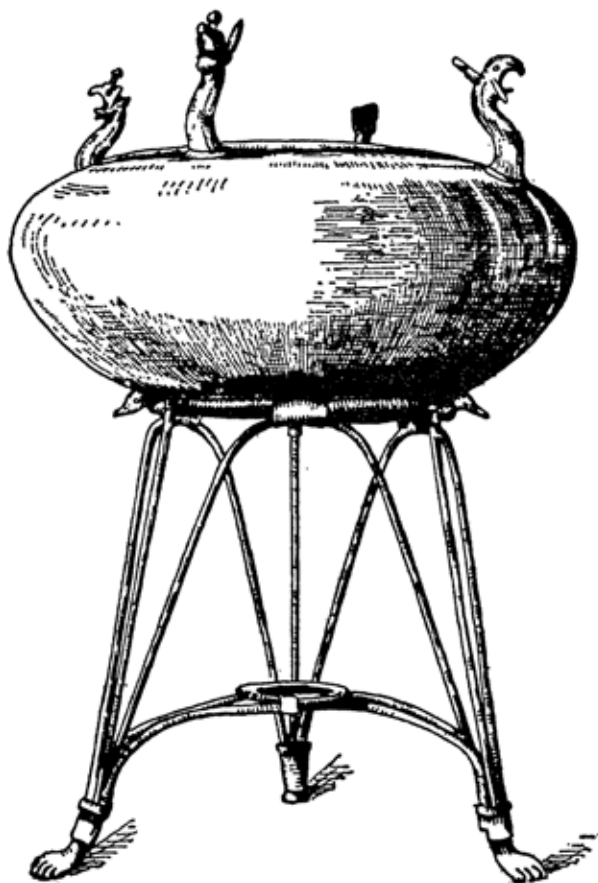


Fig. 8. *Griffin protome* decorating the bowl of a tripod. Olympia.

Olympia or Delphi. These griffon protomes were made in repoussé or cast. Ulf Jantzen has divided the repoussé ones into four groups, and the cast ones into nine. The earliest examples are repoussé: in the first group the eye is worked directly on the bronze plate forming the protome; in the other groups the eyes are inlaid with bone or ivory, the neck is thinner and longer, details are emphasized and increased: particularly noticeable is the appearance on each side of the neck of first one, and then two, long spiral curls starting at the crown of the head.

The cast tripods are much more numerous. They appear at about the same time as the second group of repoussé tripods just described. The earliest are small and rather badly made, the shapes thick and squat, but then the composition becomes finer, the moulded detail – the knob on the top of the head, the eyelids, ears, spiral curls, and the incised scales covering all the smooth surface – are accentuated and refined according to the taste of the workshops and artists working on them; the curve of the neck responding to the curve of the beak and head takes on a new tense vitality (Fig. 8). The evolution of these protomes reached its zenith in the 'monumental group' which belongs partly to the third and partly to the fourth group of cast protomes. Two techniques were used on these splendid pieces: the head is cast, while the neck is made in repoussé; the largest reach a height of 80 cm. and, being of mid seventh century date, must be numbered among the earliest and most perfect examples of hollow casting (Pl. I, 1). The harmony of their curves and the vigour of the features make a composition which is powerfully vital and expressive yet full of grace. After this perfection the design became stylized and the form stiff and over-delicate; details like the ears, knob and tongue were over-emphasized; by the middle of the sixth century the latest group no longer has inlaid eyes.

It may be that the first basins to which these griffon protomes were attached were imported from the Near East, but later they were manufactured in Greece, and the griffons are all genuinely Greek in style. The first probably came from the Peloponnese, and perhaps from Argos from a workshop which continued production at least until the end of the seventh century. To this work-



9. Tripod from La Garenne. Châtillon sur Seine Museum.

shop, besides the first example in repoussé, are to be attributed the largest members of the 'monumental group'. Both have a characteristic amplitude of design and vigour in the moulding. There is evidence of a highly productive workshop on the large island of Samos near the Ionian coast, for the excavations at the Heraion there yielded a large group, nearly all of later types. These Samian griffons are a distinct group, with specially supple undulations and narrow necks, and they have a preponderance of engraved design. The only complete specimen surviving, the

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La Garenne tripod in the Museum of Châtillon-sur-Seine, deserves special mention (Fig. 9). The tripod has iron legs with clawed feet and ducks' heads in bronze, the basin is of hammered bronze, and has cast griffon protomes. These are of a type close to those of the seventh century, but the tripod is in every particular like the one in the funeral furniture of Trebenischte which belongs to the late sixth century. This shows the *La Garenne* vessel to be an example of provincial or, more precisely, colonial work, made in one of the Greek colonies of southern Italy.

This type of support was adopted by the workshops of Magna Graecia and there became enriched, even encumbered, with sculptural ornament. The Berlin Museum has an intact example from the second half of the sixth century which came from Metaponte and was possibly made at Tarentum: a lower ring between the feet and the double ring at the top are decorated with animal figures: serpents, cows, couchant lions and protomes of horses; since these latter are placed round the top, a basin could not be held by the tripod without a further band or holder between them (Pl. II, 1).

This type of richly decorated tripod support was taken over in Etruria from Magna Graecia.

A light support, almost undecorated, with mobile diagonal legs was used later in the Greco-Roman world. But Hellenistic art produced tripods with richly ornamented basins like the well-known example from Pompeii: a finely worked piece, with lionfooted legs joined by acanthus scrolls under seated sphinxes.

Kraters, hydriae, oenochoeae, amphorae

These four categories of vase for holding water or wine can best be treated together, since, besides being similar in use they were, especially in the Archaic period which has yielded the most interesting and richly decorated examples, manufactured in the same workshops and have the same kind of plastic decoration. The various techniques in use in pre-Hellenistic Greece were used on these vases. The oenochoeae of Rhodes in the late seventeenth century constitute an interesting and peculiar group, worked cold

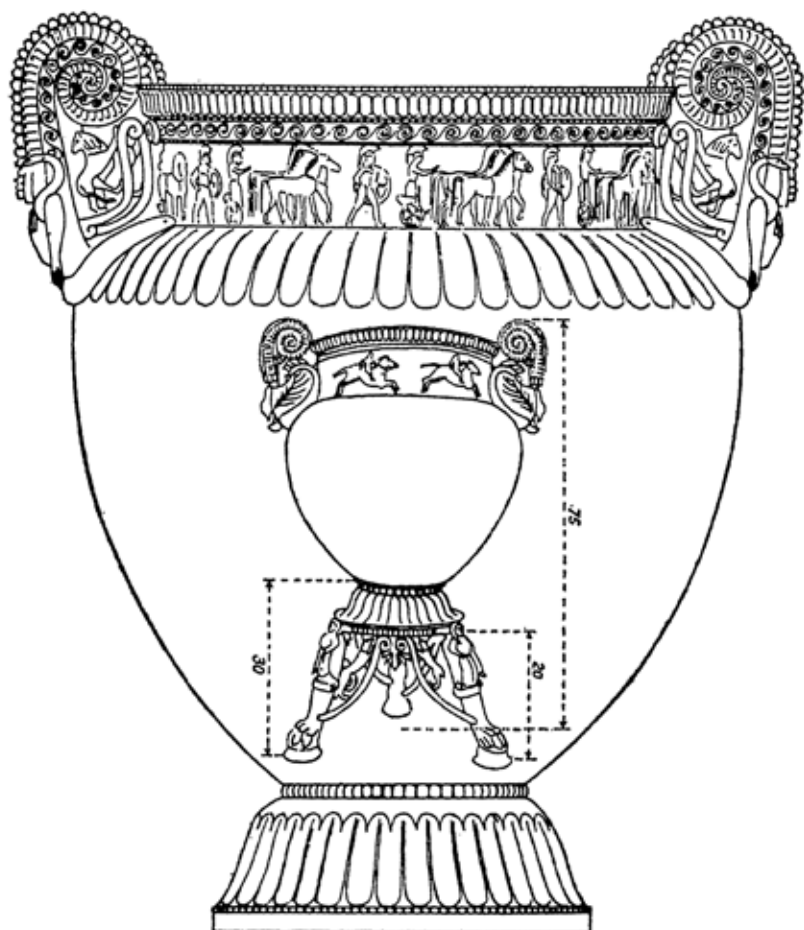


Fig. 10a. *Vix krater* (frieze of chariots and warriors). Châtillon sur Seine Museum.
 Fig. 10b. *Trebenischte krater* (frieze of horsemen) drawn on the belly of the above, for comparison (same scale). Belgrade Museum.

in preference to casting, like jewellery; each is made of one sheet of laminated and hammered bronze, and even the handle is hollow and made in repoussé out of three tubes; the only part which is cast is the double washer joining the handle to the belly with a rivet (there is a fine example in the Louvre).

On the series of vases with which we are concerned, apart

from the simple motifs on the foot, rim and body (tonguing, rows of beads, etc.), the plastic decoration is mainly found on the handle attachments. Sometimes on the kraters (called 'volute cups' from the form of their handles) there is a relief frieze round the neck.

The recent discovery of an exceptionally rich treasure of metal goods at Vix near Châtillon-sur-Seine has drawn attention to these fine bronze vases and more especially to the colossal krater which served to mix wine and water. It is by far the largest known: its height is 164 cm. and its volume 1,200 litres (Fig. 10a).

Some of these kraters were made to stand on a low tripod in the Archaic period, such as the one in the Belgrade Museum found at Trebenischte in Yugoslavia (Fig. 10b); the legs of the tripod are in the form of a lion's paw carrying a kneeling Gorgon figure. The Louvre has a support of the same type, but larger; the Gorgon measures 40 cm. high which means that its vessel was as large as the *Vix krater*.

The latter, like the two specimens found at Trebenischte, has cast ornament attached to the beaten metal of the basin. This consists of a relief frieze on the neck (fighting warriors and chariots at Vix, and cows or horsemen at Trebenischte) and handles in the form of eel-footed gorgons. There are handles of this type in several museums and collections, which shows that these large decorated bronze vases must have been very popular towards the end of the Archaic period. The *Vix krater* has been exhaustively studied and the technical information derived from this study is worth noting. The body is a masterpiece of bronze-work. It was made, including the neck, of a single piece of metal by cold hammering, and without soldering or annealing. Careful polishing afterwards removed all trace of the hammer blows, which are only revealed by micrography. The foot, with its beautiful engraved and repoussé ornament, was also made of beaten metal and soldered to the body with a collarete. The cast pieces were riveted to the body; they comprised the rim-moulding made in two pieces, the reliefs of the frieze round the neck, and the two handles; these are not of identical weight (45.6 kg. and 46.150 kg.) and the design differs in detail, showing the usual

VESSEL SHAPES AND 'IMPLEMENTS'

Greek practice of making different wax models and not using the same mould.

Three groups of vases of the same period and similar style are associated with this series of 'volute' kraters. They are hydriae, amphorae (the plastic decoration of amphora handles is insignificant: for instance a palmette at the base and two lions at the top, as at Trebenischte) and oenochoeae, of which there were again characteristic examples in the tombs at Trebenischte and at Sala Consilina (Lucania) and in the Heroon at Paestum. The group of oenochoeae and even more the group of hydriae are the more important, both in number and in richness of decoration of the handles. These can be divided into several classes and, if only by conjecture, attributed to various workshops; this contributes towards the clarification if not the solution of the controversial problem of origins of this collection of vases.

The earliest and simplest type of vertical handle, made in the first half of the sixth century, has a bust of a woman flanked by two half roundels, at the base, and two divergent serpent heads at the top. It is Laconian in style, thus confirming the authenticity of the signature of the bronzesmith Telestas on the fine example in the museum of the University of Mayence (Pl. I, 2).

Another type of vertical handle, known in a number of examples, has the form of a kouros: the body is arched to form the usual curve of a handle; the raised hands hold the tails of two lions lying on either side of the head, while the feet, flanked by two squatting rams, generally rest on a double volute crowning a palmette. The earliest example, belonging to the Louvre, is in Laconian style, as can be seen from the curve of the eyebrows, the prominent and very expressive eyes, and in the strongly moulded lips standing out sharply from the cheeks and chin. This type of handle does not appear before the middle of the sixth century and was probably made in imitation of the supports of paterae or mirrors. It was adopted by other Peloponnesian workshops, especially Corinth, and to Corinth can be attributed the *hydria* in the Museum at Volo (about 530 B.C.) which came from Trekala in Thessaly; the vertical handle has a curious variant: the kouros is kneeling and in place of the two lions at the top are two sphinxes.

The *Oenochoea* of *Sala Consilina* (Pl. III, 1) probably also came from a Corinthian workshop. It is the most accomplished example in this series, extremely elegant in form and with exquisite modelled decoration. It dates from the last quarter of the sixth century. The *Kouros* type is derived from the *Apollo of Tenea*; the design of the palmette with eleven rounded petals and crowned with the double volute is found on the reliefs of 'Argivo-Corinthian' shield armlets; the tonguing ornament can be seen on a Corinthian *oenochoea* that is twenty or thirty years earlier, and has a handle simply decorated at the top with a woman's head turned towards the inside of the vase. The vase was made entirely of cast bronze in three parts: foot, body and handle.

Models from the workshops of the Peloponnese, mainly Sparta and Corinth, were imitated in the Greek colonies of southern Italy, and the influence extended into the Etruscan provinces. The first type of vertical handle with a woman's bust was frequently reproduced, enriched with elements from the second type. The bust, surmounting two volutes over a palmette with pointed petals of triangular sections is flanked by two crouching rams, and the serpents are replaced at the top by two crouching lions (the *Hydriae of Eretria, Paestum, Sala Consilina*). The workshop which produced the fine *hydriae* with this type of handle in the second half of the sixth century was outstandingly active and successful; it may be justifiably supposed that it produced the *Vix krater* for the moulding of the foot and the rims of the handles and lip have analogous or identical elements of design. On the other hand the close and numerous similarities between the plastic ornament on the *krater* and motifs on so-called Chalcidian ceramics – warriors, horses, the statuette on the lid – suggest the hypothesis of a common origin, perhaps in Rhegion, present day Reggio, a Chalcidian colony in Magna Graecia.

There are some variations in the vertical handles of *hydriae* and *oenochoeae*: there may be a Gorgon mask or simple palmette instead of the bust. These variants may well all issue from the same workshop, to some extent at any rate: the type of gorgon with square face and flower bud between the brows is that on the

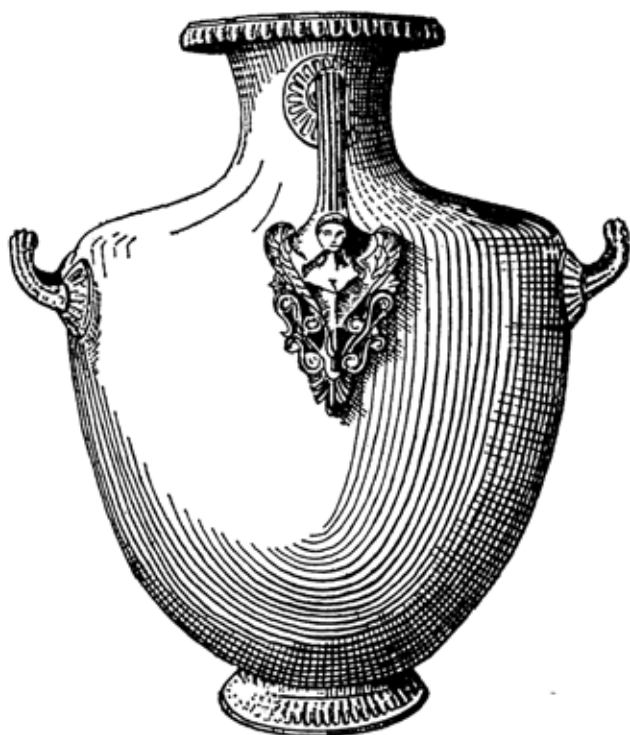


Fig. 11. *Hydria* with handle with siren decoration. Louvre.

handles of the *Vix krater*. There were, however, imitations made in less advanced workshops, like Cumae.

The kouros-shaped handle was also adopted by the workshops of Magna Graecia. There is a variant in the series of hydriae from Paestum: the kouros is replaced by a splendid standing lion flanked by serpents at the base and top of the handle. The bronze industry at Tarentum also imitated the models from the metropolis. The influence of Laconian art is recognizable on the *Graechwyl hydria* although the extraordinarily lively exuberance of the animal ornament bears the stamp of Tarentum, like the *tripod of Metaponte* of half a century later (Pl. II, 2).

In the course of the fifth century the favourite motif for vertical handles of hydriae and oenochoeae was first a woman's bust at the top of the handle, turned inwards (Metropolitan Museum,

Collection of D. M. Robinson, Boston, the Louvre, etc.) a motif, as we have seen, that was already used on a Corinthian oenochoea of the previous century.

Most of these vases were manufactured in the Peloponnese, probably at Argos and Corinth. The shoulder and belly of the Louvre oenochoea, found in Argolis, are covered entirely with a tonguing pattern and the edge of the trilobed lip on either side of the upper joining of the handle is decorated with two discs with a Silenus mask.

The form of the vases is slenderer and the necks are narrower; this tendency continues in the following century (Fig. 11). Another motif appears, this time at the base of the handle: a siren full face with spread wings above a palmette framed by a group of spirals which sometimes have central knobs of silver (British Museum).

A Berlin *hydria* has a Silenus mask instead of a siren at the base of the handle.

In the first half of the fourth century appears a type of *hydria* with a relief motif at the base of its vertical handle that resembles box mirrors in style and technique. The type continues into the second half of the fourth century; there are about fifteen examples known in museums and private collections, and a few reliefs which have survived alone or with the handle they decorate. These *hydriae*, for which the name *kados* or *kalpis* has been suggested, seem to be mainly for funerary use; the body of the vessel is of beaten metal, and foot and handles were cast. The relief decoration of the handle was generally worked in repoussé (the Eros of the *Handle of Myrina* in the Louvre is an exception, being cast in one with the handle Pl. IX, 1). The foot is usually decorated with a row of heart-shaped rays either with or without silver inlay, and there is a ring of ovoids round the mouth. It may be that the mythological subjects depicted on the reliefs at the base of the vertical handle correspond to the funerary nature of the vases, but whether mystical or not the theme is always love, with either Eros alone or Eros and 'Psyche', Dionysos and Ariadne, Dionysos and a satyr, or Boreas and Oreithyia.

The difference in style between the reliefs shows that the



1. Bowl decoration.
Griffon



2. Decoration on hydria handle.
Female head



1. Upper part of a tripod



2. Decoration on
a hydria



1. Oinochoea



2. Frieze on the Vix krater. Detail



3. Shield armband



1. Mirror support



2. Mirror lid. Detail. Aphrodite Pandemos



3. Figure vase. Maenad head



4. Mirror lid. Detail. Pan



1. Dancer



3. Ring of women



2. Worshipper



1. Kouros



2. Female head



3. Figure carrying a ram



4. Mare and foal



5. Female silhouette



1. Nude female



2. Woman wearing peplos



4. Artemis



3. Athene

5. Aphrodite





1. Warrior



2. Aphrodite

VASE DECORATIONS

1. Eros. Hydria handle



2. Athene. Medallion





GEOMETRIC. PELOPONNESE

1. Warrior

2. Bull-headed man

1. Apollo



2. Artemis

3. Aphrodite





1. Herakles



2. Ball player



3. Kouros



4. Worshipper



1. Hermes carrying a ram



2. Athlete



3. Woman wearing peplos



1. Woman in Ionian costume



2. Apollo



3. Banqueter



AEGINA
Woman wearing a tunic



1. Shepherd

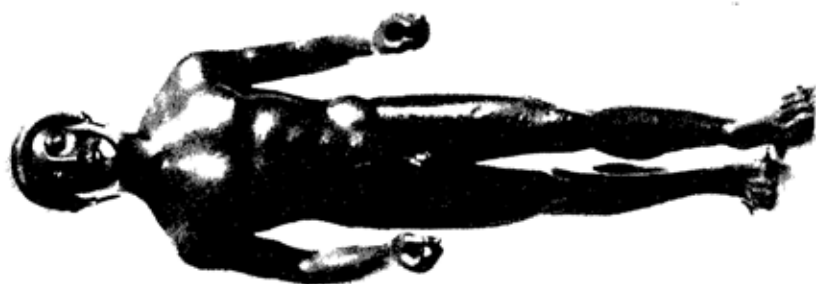


2. Silenus

ARCADIA, PELOPONNESE



1. Athene



2. Kouros



3. Discobolos



4. Athene



1. Flute player



2. Horseman



3. Kouros



4. Horseman



5. Kore



1. Saddled horse



2. He-goat

EPIRUS. LOCRI

1. Priestess (?)



2. Mirror support



1. Silenus



2. Draped woman



3. Veiled woman



4. Apollo



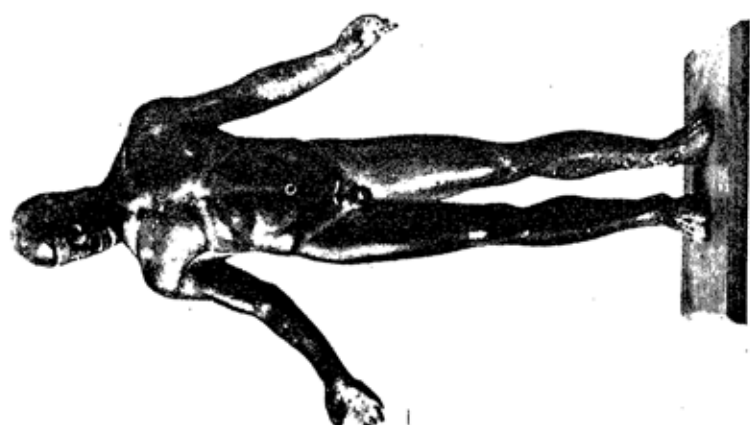
5. Banqueter



1. Zeus



2. Athlete and umpire



4. Athlete



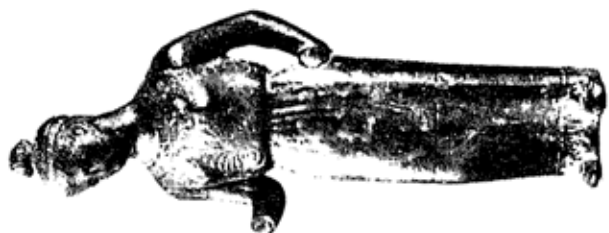
3. Wounded warrior



I. Athlete



2. Goddess



3. Young woman



4. Hermes



1. Aphrodite



2. Poseidon

3. Athlete



4. Herakles





1. Dionysos



2. Dancing satyr

3. Sleeping Eros





1. Aphrodite



2. Adonis



3. Hero



1. Harpocrates



2. Priest of Isis



3. Wrestlers



4. Negro



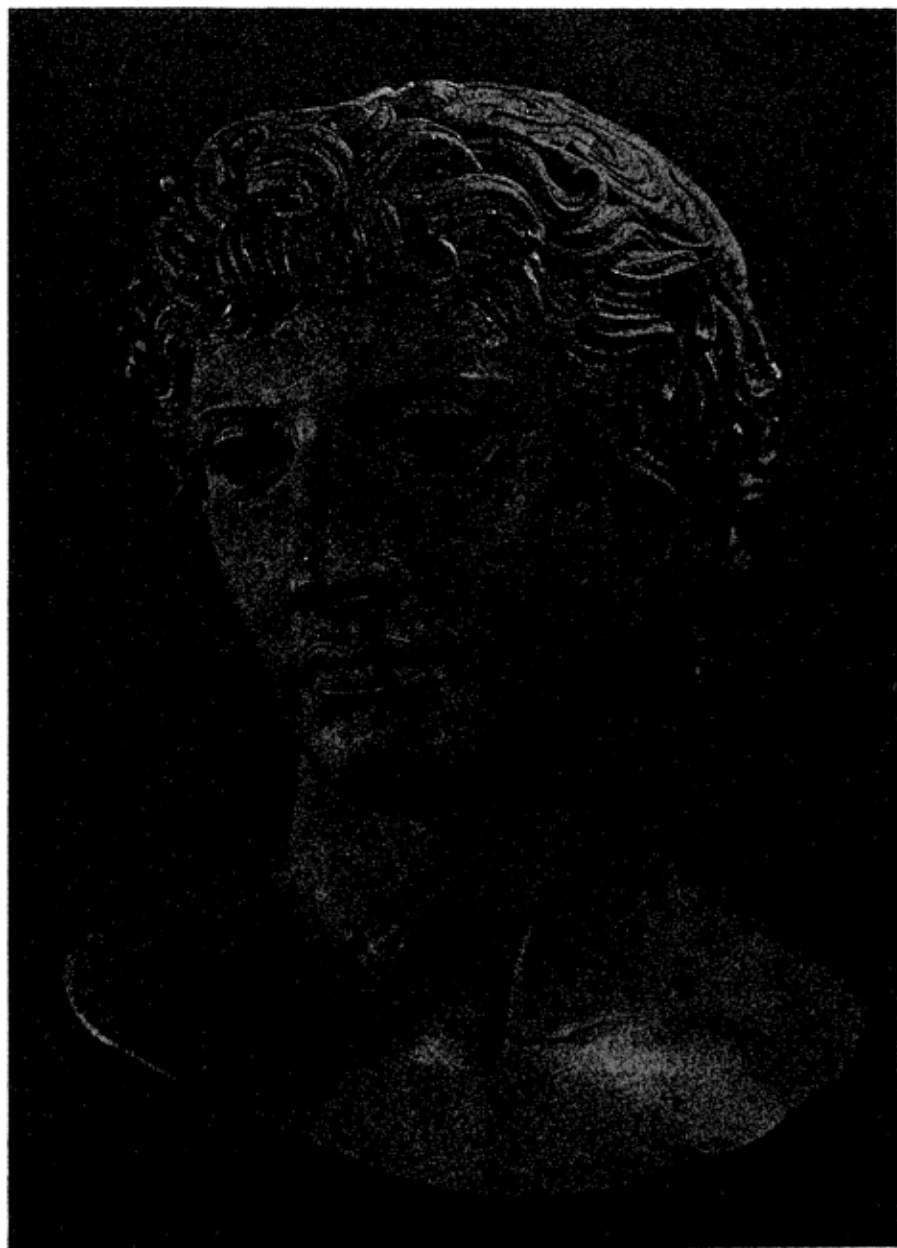
3. Poseidon



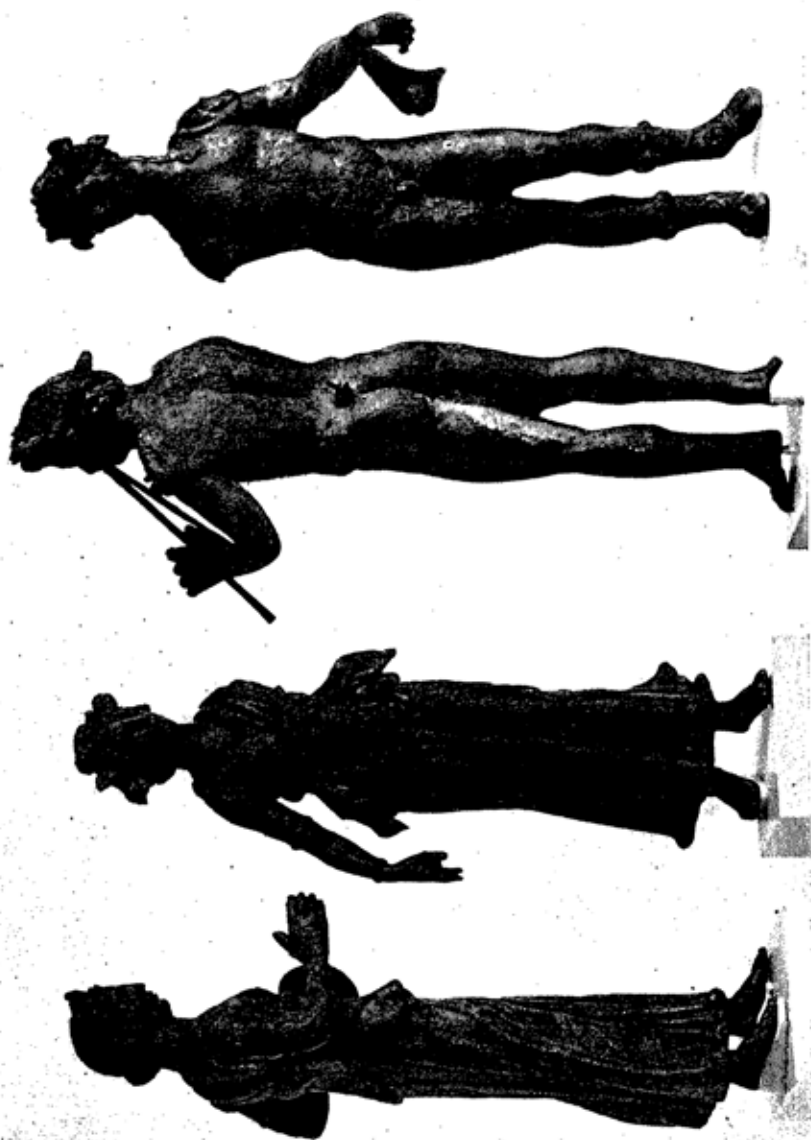
1. Wandering trader



2. Grotesque figure with cock



NEO-CLASSIC
Athlete's head



HELLENISTIC. EGYPT
Dionysiac group



1. Apollo



2. Alexander Bala



3. Alexander the Great



2. Hermes

1. Bather

'Rhodian' hydriae for which they were made were the product of several workshops which the known find-places do not help us to locate (northern Greece, Euboea, Asia Minor, Rhodes). Corinth comes first to mind by reason of the similar technique and style of some reliefs to Corinthian box mirrors; but other centres of metal working must be considered, such as Athens: the abduction group of Boreas and Oreithyia on the fine *Hydria of Pharsalia* in the Volo Museum is in Attic style.

On the hydriae, oenochoeae and amphorae of the Hellenistic period the decoration at the base of the vertical handle is usually a bust or a mask. The vases and instruments found at Pompeii illustrate the decorative fantasy of the bronzeworkers of the second and first centuries B.C.; most of the pieces in the Naples Museum were made in the Roman period, but they nearly all reproduce Hellenistic models and Alexandrian taste is dominant. Their most imaginative work appears on the shapes and ornament of the oenochoeae. They revived the Archaic motif of human – or animal-shaped handles, for instance a young Pan or a panther. Probably the relief decoration on the body of some vases (pygmies and Egyptian dancers on the *Condrieu oenochoea* in the Louvre) is imitated from silver vessels.

The *Condrieu oenochoea* exemplifies a technique used earlier on other vase forms; relief motifs modelled in the wax and cast with the body of the vase appear in the Classical period, probably in the early fourth century B.C.; one of the earliest examples is a large fragment in the Berlin Museum which comes from a 'bell' krater decorated under the lip with a dance of Maenads. This type of krater continued during the Hellenistic period (at the same time as the volute-krater). Large marble kraters, of which the *Borghese vase* is the most famous, are imitations of metal vases.

Bowls, dishes and basins

In the orientalizing period, during the eighth and seventh centuries B.C., vases with Egypto-Phoenician reliefs were imported from Phoenicia and Cyprus into Greece (Crete, Delphi, Olympia); this repoussé relief technique must have been imitated in Greek

workshops, but generally using very simple motifs such as rosettes, while some beaten metal bowls probably made in Rhodes in the second half of the seventh century, were decorated on the inside with bands of engraved animals in oriental style.

On the other hand the Berlin Museum has a splendid *dish* from Dodona entirely of cast bronze, with two flat handles; on either side of these are figured the forequarters of a winged horse in Corinthian style (like the *winged horse handle* in the Louvre, also from Dodona). It is the only perfect example (mid-sixth century) of a series which lasted, judging from the style of fairly numerous isolated handles (most of them decorated only with palmettes), from the end of the seventh to the early fifth century.

Another unique specimen is a *beaten metal basin* of the sixth century in the Berlin Museum which has four ram heads round the rim.

The basins mounted on three short claw-footed legs which survive in some quantity (there are sixteen, some complete, at Trebenischte) are known to be the 'foot-baths' referred to in Greek texts and reproduced on vases, for example on the *Chiusi Attic bowl* illustrating the recognition of Odysseus by his nurse; these basins have two handles, sometimes very carefully worked, like those on the example from Sala Consilina which end on either side in a protome of an elongated lion.

Paterae

The largest series of paterae has anthropomorphic stems. We shall discuss later the sculptural interest of these male caryatids. Over a hundred of them survive, most of them without the beaten metal bowl to which they were attached; the stem was cast. The series can be divided about equally into two groups. In the first group the figurine carries a capital formed of two diverging volutes, flanked by half palmettes; in the second, instead of the capital there are two rams sitting back to back on a kind of flattened Ionic capital (Fig. 12). The feet of the supporting figure stand either on a ram's head or on a palmette, and the joining pieces of both groups are varied. The oldest examples are not earlier than

Fig. 12. *Patera support*. Private collection.

the third quarter of the sixth century and the large majority is datable to the first half of the fifth century. The anthropomorphic stem was inspired by the example of mirror supports. The kouros stem (there are very few *paterae* with female supports) appears, strangely enough, just at the time when mirror figures are no longer nude, but clothed.

The first group is probably earlier than the second, but they both come from the Peloponnese (Argos or Corinth); one type in the first group is attributed to Athens: about twenty examples found on the Acropolis have the petals of the palmettes moulded, and not engraved as on the other specimens.

Workshops in Magna Graecia imitated models of both groups, especially the second; and most examples of this group come from southern Italy.

About the middle of the fifth century the anthropomorphic support disappears, except in Etruria, and instead is usually replaced by a simpler, flat or cylindrical support; some of these stems have an end in the form of a Bacchus head, an elongated animal, a swan neck, etc. A design with a fluted cylindrical stem ending in a goat- or ram-head remained in fashion into the Roman period.

Situlae

These bucket-shaped vessels usually have two parallel handles set slightly apart to prevent swinging. The form is specifically Italian, and is found in Etruria in Villanovian bronze work as early as the seventh century B.C. Most of the examples in Greek style whose provenance is known were found in southern Italy



or in the region of the Black Sea. The perfect specimen from *Sala Consilina* is the oldest type (late sixth century B.C.). It is made of beaten metal and is cylinder-shaped like the Villanovian situlae, with an ornament of ten parallel repoussé rings on the body. It has some cast ornament in the two handle attachments – sirens flanked by volutes – and in the two short clawed legs surmounted by a gorgon bust. At the end of the fifth century the shape is widened at the top to a ‘bell-shape’ and the body is decorated in the upper part with reliefs, at first separate (*Perseus and gorgon; Chariot of Nike*, in Berlin) and then forming a frieze round the vase and cast in one with the body (*a dionysiac scene*, in Boston). In the Hellenistic period (third to second century) the situlae are bulged at the shoulder or pinched in under the mouth in an Alexandrian shape and have no other decoration than the handle attachments (palmettes or dionysiac masks).

Pyxides

The *pyxis* is a small cylindrical or rectangular box for holding jewellery and precious objects. They were doubtless made in metal, bronze or silver, as well as in pottery, and in wood or ivory; the medallion of gilt bronze, with a full face head of *Athena*, in the Paul Angoulvent collection, if it was not a mirror decoration may have been on the lid of a *pyxis*. The vertical sides of *pyxides* were sometimes decorated in relief or inlay.

Rhytons and figure-vases

The *rhyton*, a drinking vessel in the form of a horn, originated in pastoral Iran; it was at its most perfect in precious metal in Achaemenid Persia: the point of the horn is shaped into a head or the forequarters of an animal (sheep or goat). This form was adopted by the Greeks. There are some fine examples in Greek red figure pottery and in Ionian or Tarentine metalwork; but the metal *rhytons* that have survived are almost all of gold or silver. The Louvre has however one *bronze Greek rhyton* in the form of a stag's head, which is certainly not earlier than the Hellenistic

period. (There is a Roman imitation of the model in the Naples Museum); the bronze bears traces of gilding, indicating that this type of vase was regarded as luxury ware.

Figured vases in the form of animals, human figures or most often human heads, are in the same oriental taste; they were made in some quantity in ceramics in and after the Archaic period, but are rare in bronze before Hellenistic times. The Louvre has a sixth-century *Corinthian helmeted head*. The manufacture of figure vases was mainly a development of Alexandrian art in contact with Egyptian industrial art, and represented either popular types (pygmies, negroes, crouching slaves) or busts and heads (*Hermes*, *Maenad*, Pl. iv, 3) a dionysiac child, Silenus, etc.

Lamps and candelabra

Greek lamps with plastic decoration are rare. There is a curious fourth century example in the British Museum in the form of a greyhound's head, and a Hellenistic lamp in Berlin with rich ornament of acanthus and a lid shaped like a helmet with a high crest. It is likely that the fashion of figure-lamps, like figure-vases, began at the end of the Hellenistic period, mainly in Alexandria; but nearly all surviving examples are of the Roman period.

Candelabra take the form of a narrow column fixed to three clawed feet with a ring at the top to hold first candles and later a lamp. They are mostly Etruscan or Roman but the earliest examples come from southern Italy and Pliny the Elder attributes their invention to the Tarentine metal industry. The Locris work-



Fig. 13. *Hermaphrodite carrying a torch*. Bardo Museum, Tunis.

shop must have been connected with their production, for a specimen found in the necropolis of the city is the model for a type of Etruscan candelabra which is rather different and more attractive, having much more decoration. The column of the *Locris candelabra* (at Reggio), ornamented with floral sprays and swan necks is supported by a kouros-caryatid with a corresponding kore figurine at the top. Another candelabra from Locris (in Berlin), also dating from the first half of the fifth century is the model for the most usual type used later in Etruria and then in the Roman world. A column on a claw-footed tripod carries at the top a group of two statuettes, one a man and the other a woman, standing between the four spikes on to which the candles were fixed. It is likely that some of the Archaic and pre-Classical statuettes from Magna Graecia decorated candelabra. This type of holder was superseded in the first century B.C. by a calyx lamp holder.

The Mahdia finds show there was a different kind of lighting at the end of the Hellenistic period: a *Hermaphrodite* statuette carries a socket for holding a torch (Fig. 13). In Roman times the fashion of torch figures spread widely and ultimately these bronze servants were made lifesize.

Furniture, appliqué and other ornaments

We cannot tell what many appliqué pieces or reliefs were intended for, but it is known where plastic ornament was placed on furniture. The bed had a metal frame, and at its head, the sloping and curved surface for the cushions had a moulded border on either side which was decorated



Fig. 14. *Flying Victory. Appliqué.*
National Museum, Athens.

at the bottom with a medallion (a head of Eros, for example) and at the top with a protome of horse or mule; these two ornaments have survived in large quantities, most of them from the Roman period although the prototypes are Hellenistic and may even date back to the third century B.C. (reconstructed *beds* from *Priena* in Berlin; from *Mahdia*, in the Bardo, Tunis).

From pictures on reliefs, painted vases and coins it can be seen that other furniture had plastic decoration of the kind which has survived, though it is often difficult to decide the specific role of each piece. Chairs had, for example, a sphinx to support the end of the arm, tables had claw feet, and there was relief decoration on chests (Fig. 14).

Plinths for statuettes and methods of fixing

A classification of the bases on which Greek statuettes stood would be a useful indication for dating and geographical distribution. Not all stood on bases, however; we have seen that in the Archaic period many statuettes decorated the rims of large bronze vases to which they were directly attached, and many others have survived without bases at all, and may well have never had them, being offered at the sanctuaries as they were. On the other hand there is quite a large number, especially of Archaic bronzes, which were fixed, either singly or in groups, on to stone or marble plinths: a *male nude statuette* in the Louvre (No. 115) seems to be one of these. Under his right leg is a knob left by the bronze in the casting duct, buried in a mass of lead. Probably the same can be said of statuettes or groups of figurines (Pl. XXII, 2) which are fixed on a sort of four-legged stool that shows the remains of the lead which had stuck them. The drawing in figure 4, and several of the plates serve to show the diversity of these stands, particularly those which held mirror supports. These latter are in fact a case apart: generally the bases of Archaic or Early Classical statuettes were less decorated and were no more than a plain slab, or a plinth with two, sometimes three steps, rarely more than a tenth the height of the statuette. The statuette is soldered or riveted on to this base. Solder did not become general until the Roman

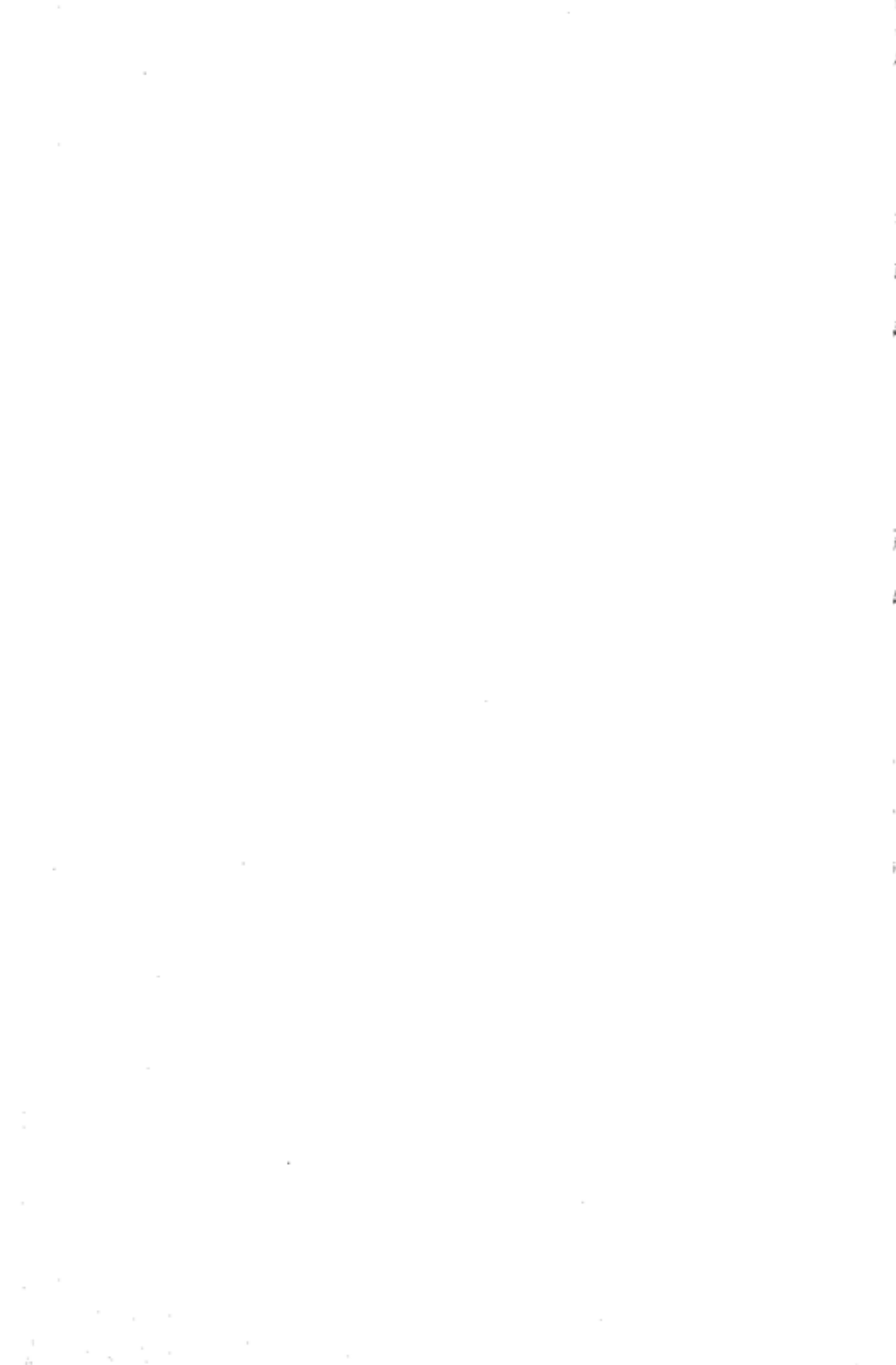
GREEK BRONZES

period, and a statuette fixed to its base by one or two rivets is in all probability an original Greek work.

In the Classical period, which is very poorly represented numerically, the circular base seems to have been the most widely used; it is of moderate height (an eighth of the height of the statuette for the *Thera Aphrodite*), (Pl. xxiv, II) and plainly moulded. In the Hellenistic period there is a greater variety of bases, circular, square and rectangular. A good example is the *Mahdia Hermes* (Pl. xxxii, 2). High bases (often more than a third of the height of the statuette) elaborately moulded and even inlaid with silver, are all later than the beginning of the Roman period.

Part II

Historical



CHAPTER ONE

THE PRE-HELLENIC PERIOD

THERE is evidence of a considerable metallurgical industry at Troy in the second half of the third millennium B.C., with copper and silver vases and bronze weapons; but it was in Crete, during the second millennium, that bronze vessels and weapons reached a degree of technical perfection and artistic quality comparable with the masterpieces of the Archaic or Classical periods. The art of ceramics, developing and perfecting itself alongside metalwork, imitated metal forms.

The vases were never cast, as they were later in Greece, but were formed of sheets of metal hammered into shape and decorated in repoussé.

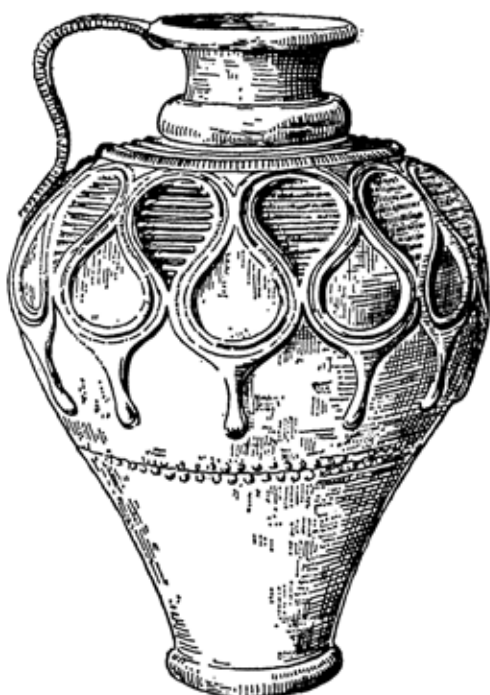
The great bronze cauldrons of Tyllissos demonstrate the technical achievement of Cretan craftsmanship. The largest is 1.4 metres in diameter and weighs 52 kg.; the bowl is made of four metal sheets, one for the bottom, three for the sides; and the rim, to which three handles are attached, is made of three sheets. All the parts are carefully assembled and joined with rivets.

These large bronze vessels have no ornament, but the rivet heads are placed to decorative effect.

The finest vases were found at the palace of Knossos. They date from the fourteenth century B.C. A ewer 34.5 cm. high and 27 cm. wide made of two pieces riveted together is decorated at the top of the body with a strange braided pattern; a projecting band masks the seam between the body and the neck (Fig. 15). A large bowl 39 cm. wide with a handle has on both sides a chain of folioles round the rim which continues on to the handle; two similar bowls have *fleur-de-lis* or shells on the rim instead of the folioles.

Fig. 15. Ewer from Knossos.

The most striking thing about these bronze vases is the felicitous adaptation of the decoration to the shapes. The ornament is compact and elegant, enriching the vase without interfering with the sweep of the line or the elegance of the contour. The rivet heads were evidently considered decoratively; rivets are even imitated on ceramic vases imitating metal forms.



Some masterpieces of Cretan armour were made as early as the first half of the second millennium B.C. Among them are the splendid daggers discovered in the shaft-tombs of Mycenae. They date, like the Knossos vases, from the sixteenth century B.C. The blades are of cast and hammered bronze; a median band has inlaid decoration of gold, silver and niello in an Egyptian technique, though characteristically Cretan in style. Two scenes depicted on the most carefully worked of the daggers are worth particular notice, both for the lively drawing and the refined colouring of the metal: the wild cats chasing duck in a *Nilotic landscape* and the *lion hunt*. In the former the sinuous silver band forming the river has been oxidized so that the fish and ducks' wings of pure silver stand out against a darker ground, and a touch of copper picks out the ear of a cat and the neck of a duck.

The drawing (Fig. 16) gives an idea of the inlay work of the lion hunt: silhouettes were cut out of the bronze to a depth of half a millimetre, and these were filled by hammering in gold and



Fig. 16. *Dagger from Mycenae. Decorated with lion-hunting scene.*
National Museum, Athens.

silver leaf which was then polished. Details were engraved with a graver and inlaid with niello. Two kinds of gold were used: a pale gold or electrum for the bodies of the warriors and the lion, and a red gold, probably mixed with copper, for the lances.

It is surprising that bronze statuettes from Crete and later from Mycenae show none of the finish, precision of contour or delicacy of detail characteristic of this armour.

This is to be explained in the first place by a difference of technique, which in the statuettes is solid casting, and secondly by the direct influence of another art form: modelling in terra cotta. The bronze carver works directly on to the metal with his hard and exact tools; the various parts must be made to fit perfectly if the object is to be usable. The caster on the other hand runs his bronze into a mould formed on a model which was made by hand from malleable material. There is much to show that the modelling of the figurine to be cast in bronze was carried out by the same method and in the same style as for a terra cotta, using the same material. The potter, however, is governed by the wheel and the demands of the shape, and aims at greater precision in his work than the modeller of figurines. This in itself brings the potter nearer to metalwork than is the modeller, and explains the imitations we have spoken of. Conversely it is natural that the bronze statuette, which began as a clay figurine, should have the character of a work in clay. Cretan bronzes have a sketchiness that is not without piquancy: the direct touch of the modeller is all the more apparent for the neglect of retouching or tooling after casting. They even frequently preserve the marks of the mould joints.

The majority of Cretan bronze statuettes represent either a man in a loin cloth in a posture of prayer or adoration, his right hand to his brow; or a woman in a frilled dress in the same posture or adumbrating a dance movement (Pl. v, 1 and 2).

THE GEOMETRIC AND EARLY ARCHAIC PERIODS

THE disintegration of the Mycenaean Empire occurred about 1200 B.C. During the centuries that followed the Greek world was slowly evolving its new structure. The proto-Geometric style succeeded the sub-Mycenaean in the early eleventh century, and the Geometric style proper appeared about 900, lasting until the end of the eighth century. These styles have been defined from a study of the painted pottery, which is abundant. Sculpture in terra cotta and ivory is relatively rare, and bronze even rarer, except in the last century of the Geometric period. There is continuity between the sub-Mycenaean and proto-Geometric styles, since both derive from that of the end of the Mycenaean period which was already stereotyped and had geometric tendencies. But the change from proto-Geometric to Geometric is abrupt. There is a marked revolution in the style of decorating painted vases: into the compact tissue of regular motifs, key pattern, lozenges and triangles, comes a living movement with the introduction of funerary and war scenes. This transformation is not easy to explain; it is a sign that Hellenism is becoming conscious of itself. Some surviving bronzes throw a little more light on this interesting problem.

Invasion and migration and its train of poverty almost completely suspended intercourse between the Greek and oriental worlds from the twelfth to the tenth centuries. No creative civilization is possible without exchanges, for ideas, forms and technical invention are modified, renewed and enriched in their transfer from one people to another. Bronze craft is the best of all human activities to illustrate this: it only existed and prospered in early

times through the constant contact maintained between the farthest points of the Mediterranean world. For all the obscurity of the archaeological record this industry cannot be said to have been interrupted completely after the twelfth century. A few bronze objects can be dated, albeit very approximately, within the limits of the sub-Mycenean and proto-Geometric periods, that is to say to some time between the eleventh and early ninth centuries. These objects come not only from the island of Cyprus, which was not directly involved in the upheavals of the beginning of the Iron Age, but from other places on the mainland and islands of Greece. Most noteworthy is a series of tripods which have been found, some complete, on several sites on Cyprus and Crete and at Tiryns, Olympia and Athens (see p. 54).

Some statuettes, though difficult to date, have features which give further proof of the transmission of techniques and customs. They are inferior even to the most banal products of decadent Mycenean art, being summarily and coarsely modelled, but they have a relationship with pre-Hellenic bronze statuettes: like them, they reflect the forms of terra cotta figurines, faithfully reproducing the soft clay model. Two Cretan *female nude* statuettes now in the Louvre show the transition between late Minoan and Geometric, and two closely comparable small pieces, found at Olympia, belong to this style. They are groups of *seven female nudes* entwined in a circular dance (Pl. v, 3); the most striking is perhaps the group in Berlin, with its grouping recalling a rugby scrum.

A great novelty in Geometric art was the invention of forms in which the inherent qualities of metal are expressed. It is clear that figures of wax shaped in a mould should bequeath to the metal the rounded hand-formed contours of modeller's work. The change occurred when the smith succeeded the modeller: we pass from the studio of Prometheus to the forge of Hephaistos.

The holy places of mainland Greece, from Macedonia to Attica and Sparta, and those of Rhodes, have yielded a large number of small Geometric bronzes, most of which are animals. The most primitive images of quadrupeds were made, as we have already described, from a plain sheet of metal cut out and folded. Soon

these childish pieces were replaced by figurines of drawn and hammered bronze which show the essential quality of work in metal. In the Geometric period, the smiths who made them put their mark on their products, although to increase production they soon had recourse to moulds and casting. But the most carefully worked cast figurines were always hammered and chiselled after casting; they give the feeling of beaten and cut metal, retaining the sharpness of line and tenseness of silhouette which is their peculiar flavour.

There are many birds and not a few oxen and cows among the animal statuettes, but the deer and horses show to best advantage the genius of observation of the artist of the Geometric period which he used with surprising originality of style.

The frequency of the animals represented varies according to the sanctuaries and no doubt corresponds to the preferences of the divinity, but it also demonstrates the value or relative importance of the different species in the region of the holy place. Thus cattle predominate in the Cabirion at Thebes, in the lush plains of Boeotia, while deer are more numerous at Tegaea than horses (which are the most frequent everywhere else) because stags and hinds abound in the mountains of Arcady, as they do in Arcadian myth.

Birds stood on a base or had a ring for hanging; the most usual are water-birds with thin body and long flat beak, and cocks, with comb and tail decorated with incised circles.

The heavy forms of the cattle, lying or standing, continue at the Cabirion of Thebes right into the Classical period; but the type of Geometric horse whose best representations were found at Olympia is very different from the horses on the Parthenon frieze. The high stepping, delicate-headed type of the Geometric period is analogous to those of Halstatt and the Caucasus. Figurines of horses, though cast, are slender; the neck is flat, the haunches hollowed on the inside. The surface was carefully scraped and smoothed after hammering; on the *horse* in the Louvre, No. 86, there are traces of the file on the neck and the top of the left haunch (casting seams were not removed between the fore-legs). The horses, like the deer and other animals, were fixed with tin

solder on to rectangular plinths. These were separately cast, of an average of about 3 mm. thickness, partially hollowed out underneath or perforated in a simple geometric design to serve as a seal.

Groups of animals were made at this period – a mare giving suck to its foal (Pl. VI, 4), a hind and its fawn, dogs attacking a deer.

The human figure is represented in the Geometric period by the few rare nude female statuettes already mentioned (they may be in fact of earlier date) and the more numerous warrior figurines. A *Zeus* (?) from Dodona is the best example of the earliest Geometric figurines. They were made from a bar of metal hammered and shaped while hot to detach the limbs from the trunk. The great majority of surviving examples were cast; one in the Louvre, No. 81, has casting faults on the lower part of the body (Pl. x, 1), and the round modelling of the legs and the treatment of the face are reminiscent of terra cotta shapes. On the other hand the clear-cut line and the flattening of the torso are the effect of hammering; the movement of the arms, the right one raised, the left curved down to the thigh, was almost certainly obtained by twisting under heat. The feet and hands are not detailed, the fingers not depicted; the hands, or rather the widened extremities of the arms, are pierced, the right for holding the lance, the left for the shield. This type of warrior has his descendants in the following period, but their character is changed, the Geometric schematization avoided – a schematization which showed a taste for clarity of outline and a sense of proportion which were typically Greek.

The similarity of technique and forms among Geometric bronzes makes it difficult to recognize the style of one or another centre of production; small objects, many of which were doubtless made on the spot, in the sanctuaries where they have been found, could travel easily, and this explains their common style.

There is, however, one class of objects which have a known place of origin: the large fibulae with engraved plaques, coming from Boeotia.

The fibula is the direct ancestor of our safety pin. Mycenaean specimens of the 'bowed' type have the exact shape of modern

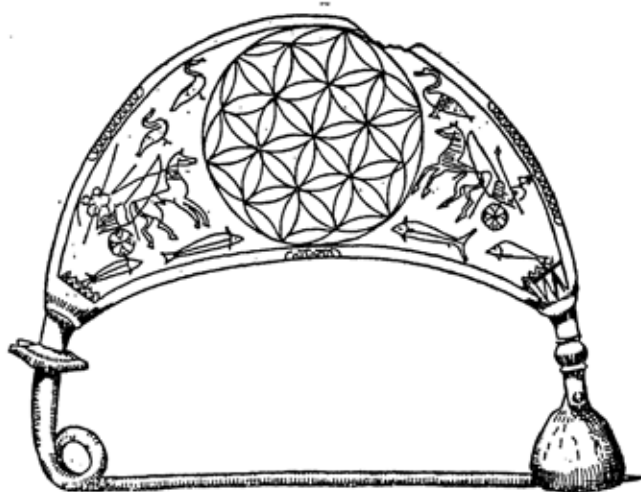


Fig. 17. *Boeotian fibula*. Munich Museum.

ones, only they are larger, and were intended to hold together the two edges of a garment, generally on the shoulders. In the Geometric period the bow and the fastening plaque were made larger for decorative effect. The most elaborate types were made in Boeotia, with engraved decoration either on the fastening plaque or on the bow which then was given a crescent shape. The ornament is very varied, from a simple geometric motif to mythological scenes. Among animal motifs fish, water bird and horse are the most usual. The exploits of Herakles appear on several fastening plaques. There is even an episode from the *Iliad*: the Trojan horse. The crescent plaques have a rosette in the centre surrounded by concentric circles and on either side rather full compositions. Round the principal motif, which may be a boat, a war chariot, a hunter, etc., the field is filled with birds and fishes (Fig. 17). The disordered fantasy of these compositions betrays Boeotian taste, the same as on painted vases from that region; it is a taste far removed from the clarity and moderation of Attica. But it should be added that it was on these large eighth century fibulae that the first illustrations of Greek mythology appear, in the country of Hesiod and Pindar.

THE ARCHAIC PERIOD

Early Archaism

(from the eighth century to the end of the seventh century B.C.)

THIS period is very important. The techniques and types which are the basis of later creation can be seen appearing or being perfected. It is, too, the period when Greek art truly assimilates and transforms into its own substance the oriental elements which were at its roots and the period when the individual styles of various centres begin to show themselves.

In sculpture the most important event is the appearance of figures appreciably larger than statuettes. In the seventh century the first large marble statues were carved, and in emulation the bronze workers tried to approach, if not to reach the same dimensions. We do not know if any of these attempts were made in solid casting, but in the seventh century the first bronzes were made which can be truly said to exceed the dimensions of minor pieces. They are either in hammered bronze over a wooden core (*sphyrelaton*) or hollow cast.

The first technique is exemplified by a group of three small statues discovered at Dreros in Crete. *Apollo*, *Artemis* and *Leto*, dating from the middle of the seventh century B.C.; the *Apollo* is more than 80 cm. high: the nude bodies are conceived with the aesthetic qualities of metal in mind, the masses simplified, smooth and rounded, and clearly articulated; but it is the work of a vessel-maker, giving more an impression of hollowness than of solidity. On the other hand the earliest example of hollow casting that we

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know, from the second half of the seventh century, is the *Karlsruhe Female head* from Crete, and this looks as solid as if it were made by solid casting. The same may be said of the *Cyprus woman's head* in the Louvre (Pl. vi, 2). The hammering process applied to statuettes in the Geometric period rid bronze sculpture of the softness acquired from the modelling technique of terra cotta; and the austere 'daedalic' style which succeeded the Geometric at the beginning of the seventh century added a wholesome influence.

This new spirit can be seen at work as early as 700 B.C. against the animated, but loose and ungainly, style of the most evolved figures of warriors of the preceding period. It is noticeable in the *Mantiklos Apollo*, a Boeotian work, and in a *female statuette* from *Menelaion* (near Sparta). The Apollo, despite his unnaturally long, aristocratic neck, and the Lady of Menelaion show a consciousness of construction that gives strong definition to the larger divisions of the body (Pl. vii, 2).

The contribution of Crete to 'daedalic' art seems to have been the dominating one. The two most evolved statuettes in this style are attributed to the island, dating from the last quarter of the seventh century. They are the *Delphi Kouros* and the *Kriophoros* in the *Berlin Museum* (Pl. vi, 1, 3). The kouros is the first of a series of 'archaic Apollos'; it is one of the first clearly characteristic expressions of the Greek genius in sculpture. The muscle-masses are plastically differentiated and the proportions, despite the narrowness of the waist, are deliberate: the height of the head is contained $7\frac{1}{2}$ times in that of the body, and the division of the legs starts exactly at half the height; the features are still highly accentuated, but show a tendency to regularization. Although the *Berlin Kriophoros* shows its more recent date (end of the seventh century) by some details of the musculature on its chest and knees, it is more closely related to the *Dreros Apollo*, and can be identified with an 'Eteocretan' sculpture which seems to be impregnated with Minoan survivals.

The majority of the bronzes in daedalic style, and those immediately preceding or following it, are from Dorian countries: Rhodes, Crete and the Peloponnese. The effect of contacts

with the Orient on the metallic industry in Greece is undeniable, and we shall see its importance on incised and repoussé decoration. Nevertheless, external influences are subordinate to the internal evolution manifest in the development of institutions and in the increasingly clear sense among the Greeks of what united and what divided them. The gesticulating warrior type is affected at the end of the Geometric period by the Syrian god Reshef, and the contrasting rigidly frontal figures in daedalic style in the following century were presumably inspired by Asiatic or Egyptian models; but, especially in the latter, the originality of the Greek style is striking. A good illustration of this is a comparison of the *Menelaion woman* from Sparta, which already belongs to the daedalic school, with a *female figurine from Samos* (Pl. xviii, 5). This latter, although more than half a century later in date, is still much more Asiatic in spite of the treatment of the drapery, which is already in Greek style: the head is large, the shoulders narrow, the arms and body in a compact block, and she is much stiffer than the Spartan woman whose broad chest seems to breathe and whose arms are free, so that she seems ready to move in spite of the rigid austerity of her form.

The influence of models from the Near East on incised or repoussé decoration of metalwork is vouched for by the importation into Greece (and incidentally into Etruria as well), in the early Archaic period, of Cypriot and Phoenician bowls decorated with Assyrian and Egyptian motifs. In the eighth century the decoration and technique of these imported pieces were imitated in Crete, as is seen in the series of votive shields at Ida and Palaikastro. The most typical have a large central circle framed in concentric zones and inside it an animal head or protome in high relief surrounded by sphinx, serpents or a hunting scene. The style of this repoussé ornament, enhanced by engraving, first followed the oriental models closely, but during the seventh century it acquired the mark of the truly Greek daedalic style (for example in the profile and hair).

In the seventh century appeared a series of armour, mostly Cretan in origin, with almost exclusively incised decoration. They are breast plates or *mitra* (which protected the abdomen) and cut-out

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plaques for appliqué. We have already quoted two breast plates from Olympia on which the figures are treated in the style found on oriental ceramics. The Louvre has a plaque with more restrained ornamental detail in a specifically metallic style. The scene shows a young huntsman with a spiral lock of hair on his brow reminiscent of Minoan fashion, carrying a wild goat, and a bearded archer whose hair is bound in a scarf such as is still worn nowadays by Cretan peasants, trying to take it from him. Both figures, dressed in short tunics, have long legs, narrow waist and wide shoulders; the intersecting movement of the two figures has a dancing rhythm which gives the work a typically Hellenic quality. We reproduce in Plate VI, 5, a fragment in the same style and from the same place: a *bust of a woman with long hair*. There are similar cut-out plaques at Oxford and Copenhagen.

The Later Archaic Period

The new independence of Greek art from oriental influences encouraged, in the first years of the sixth century, the development of individual styles in the different art centres of Greece. This was especially true of Greece proper. The drive towards originality, animated by the rivalry between the cities, is best seen in small sculpture and the decorative arts. The amazing impetus of marble sculpture, which was producing colossi at the end of the seventh century, perhaps stood in the way of the development of large bronze statues, but it had no adverse effect on the manufacture of the small but exquisite pieces which increased in number and improved in quality throughout the sixth and early fifth centuries.

Attributions of Archaic bronzes to the different centres of production are very uncertain. Many pieces in museums are from unknown or uncertain sources; even when they are known it is not sufficient: the many examples found in the pan-Hellenic centres like Olympia, Delphi and Dodona were obviously imported from different parts of Greece; those on the Acropolis at Athens, which as a cult centre drew foreigners from outside the country, may not even all be Attic in origin. There are dedications engraved

in the metal which show a precise location by their alphabet or the name of the donor, but the dedicated object may well have travelled before being inscribed. The series of bronzes which can be constituted, more or less by conjecture, according to origin or style are very incomplete, particularly when compared to the series established by the rich collections of coins, painted vases and terra cottas.

Cretan production seems to have stopped almost completely at the beginning of the sixth century, whereas in the principal centres of the Peloponnese it becomes more and more abundant and varied. But although we are comparatively well informed on the Attic workshops we know very little, even nothing at all about centres which by tradition had an important metal industry, such as Delos, Chalcis, Aegina, Tarentum, or any of the rich Ionian cities except Samos.

Of surviving figurines many were handles of oenochocae or hydriae, supports of basins or incense burners, stems of mirrors or paterae; some decorated the rims of large vessels. These latter comprise statuettes as free in their composition as 'pure' sculpture, whereas those used as supports are, with few exceptions, much more rigid in attitude.

The two largest series are handles or supports of mirrors and of paterae. They mostly survive without the disc or bowl to which they were attached; the large majority of mirror supports are female figurines (the minority of male figurines comes almost entirely from southern Italy) in a variety of types, attitudes and draperies which makes them valuable for the study of small bronze sculpture; the paterae supports, apart from a few exceptional female figurines, are in the form of a kouros with joined legs and raised arms, in a rigid posture which makes them less interesting for the study of forms and style.

Both series began in the first half of the sixth century and lasted into the second half of the fifth, thus covering almost exactly the period covered by the present chapter. The persistence of the figurine as a handle or support until the beginning of the Classical period vindicates the correctness of treating together the work of the sixth century and the first half of the fifth, despite the great

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changes which occurred in the evolution of Greek sculpture at the beginning of the fifth century. In minor sculpture the continuity is certain; the influence of the great masters is hardly felt, doubtless partly because we know little about it, but also because it developed within the framework of a strong tradition. In the Classical period this is not so, and what works remain from then bear more or less clearly the imprint of dominant personalities. In the Archaic and Early Classical periods the idea of different workshops or centres of production is irresistible, even though attributions are often uncertain. This uncertainty itself indicates how little uniformity there is even inside the groups which can be formed; even the least carefully made 'mass-produced' pieces have their individual character, and the best are almost always of a surprising originality, as can be seen each time a lucky find reveals a new model.

The Peloponnese. Crete, as we have said, probably ceased producing in the late seventh century. The Peloponnesian workshops took over and were the largest producers in the ensuing period.

There were two clearly defined groups in the central and southern Peloponnese: the Spartan and the Arcadian. In the north-west Peloponnese there were three very large art centres: Sicyon, Corinth and Argos; distinctions between the products of these three centres are to a great extent conjectural.

I. SPARTA

Laconian production, vouched for both in literature and by numerous finds in Sparta itself, included vases, mirrors and various kinds of statuette. It is distinguished by a preference for certain exclusively Spartan types, and by some clear stylistic characteristics. Almost all nude female statuettes, either supporting mirrors, or, more rarely, free-standing, are Spartan; equally so are a goddess type, Artemis or Athene, in a plain narrow peplos with very short folds; a type of helmeted warrior with cuirass, leggings, lance and shield; and a female runner in a short tunic.

The Louvre has a *nude female mirror support* which is probably the earliest of this series (Pl. VII, 1). It dates from the early sixth

century and already has all the typical Spartan features; slender body and long sinewy legs, very arched thighs, high breasts and a long face with large and strongly marked features. Another statuette in the Louvre shows the same type after the middle of the century, similar in character and proportions; but the body has gained in thickness and solidity; in particular the muscular swellings on the thighs (on one of which is engraved the name of the donor) show an observation of athletic development; it illustrates what we know of the athletic activities pursued by Spartan girls (Pl. VII, 5). The same change is noticeable in two statuettes of *female runners*, not so far apart in time as these two nudes, one in the British Museum who is slender and delicate, and one from Dodona, in the Athens Museum, who is strongly muscular.

The male type has the same physical character and evolved along the same lines: long and muscular thighs, a narrow, high waist, the face a long oval. The Louvre has an example slightly later in date than the later nude female statuette, but the line is more supple and the modelling is rounder.

Typically Spartan divinities, dressed in a peplos with a short tuck hardly covering the top of the bust are well exemplified by the *Artemis Daidaleia* at Boston (Pl. VII, 4) who survives complete on a three-stepped base, and by several figures of *Athene* brandishing a lance with a shield on her left arm (Pl. VII, 3. Louvre; there is a fine and perfect example at Mariemont). These two statuettes both date from the second half of the sixth century.

A fine statuette in the Berlin Museum shows that Sparta was the originator, a short while after the middle of the sixth century, of the *kore in Ionian costume*, who wears a cloak draped obliquely across her clinging tunic. This type, imported from Ionia, has however acquired features of Spartan style: a long face with accentuated features, a slender waist and a sober treatment of the draperies (the tunic unpleated, like the peplos of the Spartan *Artemis* and *Athene*) (Pl. VIII, 2).

The Spartan character of a piece is less recognizable when the forms begin to acquire thickness and approximate to the more massive type prevalent in the centre and north-east of the Pelopon-

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nese. Two statuettes of warriors demonstrate this, one found in Messenia, the other in Sparta. They wear Corinthian helmets with high crowns, and decorated cuirasses; they are short-bearded, and the Spartan warrior, whose name, Karmos, is inscribed on the two-stepped base, has his upper lip shaved in Spartan fashion. The warrior from Messenia is, with his slender figure, close to the earlier type of warrior brandishing a lance, but the Karmos is short and squat and although very Spartan in the energetic expression of his face he approximates in his proportions to some Arcadian or Argive figurines.

When, in the late sixth and early fifth centuries the Spartan bronze workers addressed themselves to the new types with more movement, such as gods or warriors striding, athletes in action, trumpet players, the formation of the face maintained its original Spartan features, with bony forehead and strongly arched eyebrows.

2. ARCADIA

The existence of an Arcadian style, or at any rate of a local manufacture by local artists has been disputed, but there is no more homogeneous group than the *Arcadian shepherds* (Pl. xvi). They are short men with sloping shoulders, wrapped in rough woollen capes, the edges sometimes joined under the chin with a large pin. They wear conical leather or felt caps, have wide inexpressive faces, large eyes, often without lids, and rough short beards. Some, similarly bearded and capped are only clad in short tunics, generally decorated with a row of herring-bone incised round the neck, and they carry a small ram under the left arm, or sometimes, although more rarely, across the shoulders.

Statuettes of divinities, some of which are evidently related in character to the shepherds from the same region, have been discovered in Arcadian sanctuaries, such as Tegaea, Lousoi and on Mount Lycaeus. *Hermes Kriophoros* is the most typically Arcadian: protector of flocks. Several statuettes from Arcadia show him, like the shepherds, in a short tunic, his only distinguishing feature being his winged shoes. It is strange that the other pastoral deity, Pan, who according to local legend was begotten by Hermes, only

appears rather late. This type of rustic daemon assumed a fixed form much later than the similarly animalistic satyr and Silenus. This is probably because the cult of Pan originated in Arcadia and did not penetrate the Greek world before the fifth century, and it was not until the fourth century that the little goat god joined the dionysian cycle; he did not benefit in the Archaic period from the inventive imagination of the Ionian genius. The two earliest figurines known (one in Berlin, the other in the Louvre) are from Arcadia, but they are no older than the second half of the fifth century B.C. Both Pans have the right hand raised in the gesture of watching or dancing and the Louvre figure holds a five-reed pipe in his left hand. The Berlin Pan has a goat head, but the other, less finely modelled, has a humanized face, though the ears and horns and the hairy legs of the goat remain; in fact he is the classic god Pan. These two figurines are interesting evidence of the survival into Classical times of a local production, rather out-dated but lively and full of character.

Other locally produced statuettes of divinities were mostly of types widely distributed in the Greek world. For instance, the *seated Demeter* from Tegaea, holding a pomegranate in the right hand and a quince in her left, is a ponderous goddess with heavy rough features and a mouth like a sabre-cut. The Arcadian touch is more noticeable on the goddesses in peplos; they are short in stature with feet apart and parallel, standing heavily on the ground like the *Artemis Hamaera* from Lousoi, who holds a nocturnal torch in her right hand and the poppy of sleep in her left (Berlin), and the *Arcadian Priestess of Gortys*. Both of them are little earlier than the middle of the fifth century B.C.

A massive *Herakles brandishing his club* (Metropolitan Museum, New York), found at Mantinea, makes an interesting comparison with the other statuettes of the same period (between 500 and 470 B.C.) dealing with the same motif but from the more sophisticated workshops of Argos or Corinth. The Arcadian Herakles steps with his whole body facing forward like the Geometric warriors or Spartan hoplites, following the principle of free standing sculpture, whereas the fighting figures of *Herakles* or *Zeus* from Argos (Pl. XII, 1) and Corinth, with frontal torso and

legs in profile, have adopted the manner of presentation of drawing or relief used in the earlier art of Egypt and the Ancient East.

It is difficult to date the Arcadian bronzes, since they belong to belated and provincial art. Although we have several series of figurines covering the Geometric to the Classical periods from several Arcadian holy places, very few of the surviving Archaic bronzes are earlier than the middle of the sixth century B.C.; the majority are late sixth or early fifth century. Apart from the shepherds in their capes, the Arcadian statuettes reproduce in their own style models from Sparta, Argos, Corinth or Sicyon. It is probable, indeed, that the best examples of the type of *Hermes Kriophoros* come from a workshop in Sicyon. One in the *Stathatos* collection (Pl. XIII, 1) is about 530 B.C., and one in *Boston*, dating from about 520–510 B.C., is made with such refinement it has been thought a later piece in consciously Archaic style.

3. CORINTH, ARGOS AND SICYON

These three workshops must be treated together; their work is parallel and often very similar, and it is easier to distinguish them when examining them side by side. There are three main types from the three workshops: the *kouros*, who becomes Apollo or some other god during the fifth century, the female statuette wearing a peplos, and the fighting god or hero, generally Zeus with the thunderbolt or Herakles brandishing his club.

Neither excavation nor chance discovery has yet brought to light any bronze statuettes of the sixth century from the north-east Peloponnese. We have very few certain examples of the art of the Argive bronze workers for this important period in which Sparta and Arcadia are so well represented. The discovery in 1949 of the lower part of a large statuette of a *kouros* in the sanctuary of Hera at Argos has provided a valuable mid-sixth century link between the robust Delphic twins which Polymedes carved in marble about 580 B.C., and the canon of Polyclitus a century and a half later. Some features of Argive style are visible on this fine fragment: the legs are slightly apart to give the figure stability, the thighs firmly rounded, showing the artist's appreciation of volume, and the articulation of the knee is emphasized to give a

sense of organic structure. The same traits are found, even nearer to the style of the *Argos twins* at Delphi, on a statuette from the sanctuary of Apollo Epikourios at Bassai. Its simplified forms and rather crude workmanship probably betray the hand of some Arcadian artisan: it is perhaps one more proof of the lack of independence of the Arcadian workshops compared with the large creative centres of the Peloponnese. These two examples allow us to count as typically Argive a small *kouros* in the Louvre, of unknown origin, which is in the direct descent from the *Argos twins* of Polymedes (Pl. XII, 3).

Mirror and patera supports in the form of *kouros* are all, we have said, from the first half of the fifth century, and the functional requirement of a rigid and archaic frontality detracts in great measure from their stylistic interest. We must however mention here a rare specimen of a mirror support, found at Rhenea, which seems to be a reduction in bronze of the *marble kouros of Tenea*, hence allowing us to date it to the middle of the sixth century and to attribute it to a Corinthian workshop. A quarter of a century later a small *Apollo dedicated at Dodona* by the Corinthian Etymocleidas has similar features, despite its shorter stature and indifferent workmanship (Pl. XI, 1); the closed thighs and elongated torso distinguish this Corinthian type from the more massive and solid Argive type.

In the early fifth century a change occurred in the type of the Archaic *kouros*; some measure of asymmetry of stance and the varied postures now used, demanded a closer knowledge of the musculature and articulations. Hence there is greater variation in form, and a greater independence of earlier models, which leaves more scope for individual initiative, seen now equally in the work of the master artists and in minor artisan productions. This makes it more difficult to allocate the examples that have come down to us to the different art centres, but some strong traditional features persist and allow a satisfactory classification of the more characteristic pieces.

A large group centres round the *Apollo of Piombino*. This statue is one of the very rare large Archaic bronzes surviving. It has been plausibly connected with a famous work of Kanachos of Sicyon.

the *Apollo Phileios* of the Didymeion at Miletus, who carries a deer on his right hand and a bow in his left. Kanachos' statue has disappeared, but to judge by Roman coins on which it is reproduced the parallel in gesture and attitude with the Louvre statue is clear. The *Apollo of Piombino* may derive from the *Phileios*, but it is not a slavish copy; in the sweet, rather soft modelling and effeminate charm of the face one may detect an eclectic taste which is perhaps more at home in Magna Graecia than in the Peloponnese. The fact moreover that Kanachos had made a copy of his *Apollo Phileios* for the Ismenion at Thebes might explain the striking similarity between the latest of the series of marble *kouroi* found in the Ptoion in Boeotia, and the *Apollo of Piombino*. The bronze *Poseidon* found at Kreusis, also in Boeotia, belongs to the same family and its dimensions are approximately the same as those of the *Apollo of Piombino* (118 and 115 cm.). These two large bronzes are clearly related to the Boston *Hermes kriophoros* which is plausibly attributed to the workshop at Sicyon. With twenty or thirty years between them, and taking account of advances in the rendering of anatomy and in the freedom of movement, we find the essential features remain the same: clarity of outline, a deliberate balance in attitude and proportions, persistence of frontal symmetry, immobility and regularity. A statuette in the Louvre of the first quarter of the fifth century, the *David Weill youth*, is a good example of this style: the supple vigour of the musculature seen in profile stands in contrast to the impassive regularity of the frontal view (Pl. XIII, 2).

The stylistic distinctions drawn between the workshops of the northern Peloponnese during the period when the classical models were evolving, are probably more theoretical than real. Argos was the most active sculptural centre, and its taste for volume and massive structure continued unabated. One may suppose that artists there responded most rapidly to the effects of the revolution occurring in Ionia or in Athens, in the first years of the fifth century, which substituted the *déhanchement* for frontality. The *Dionysos* of the Louvre, which comes from Olympia, and the *ball player* from Ligurio in the Berlin Museum (Pl. XII, 2) show two facets of the Argive style of about the middle

of the fifth century B.C., one more slender and animated, the other more massive, but both strongly articulated and giving an immediate impression of weight by the projection of the muscle-masses, the poise of the head and the suspension of the arms.

The difference between the frontal and profiled type in the representation of a fighting Herakles was already discussed in relation to the Mantinea *Herakles* in the Metropolitan Museum, New York. The latter is by far the most frequent, and the majority come from the Peloponnesian studios. The *Louvre Herakles*, which is also attributed to Mantinea, is one of the most typically Argive: the pose is solidly balanced, and although the attitude is eminently static the torso has already the breadth of shoulders typical of Polyclitus; the straight head, round and broad, the face with short rounded beard are reminiscent of the *Herakles on the metopes* at Olympia (Pl. XII, 1). Two statuettes of *Zeus with thunderbolt* from *Perachora* and from *Dodona* are the Corinthian edition of the same type: unlike the two Herakles they are in full movement, especially the former which is earlier by ten or twenty years and has his right arm raised higher, his head and chest bent forward; the contours are sharper, the torso thinner, and the muscles taut for action. One can imagine, behind these figurines, a succession of draughtsmen skilled in tracing lively silhouettes to run round the walls of vases.

It is probable that the bronze workers of Argos, like the Spartans, adopted in the first half of the sixth century the type of woman in peplos created by Cretan art – the austere drapery covering the body without a fold, like a sheath. Argos must be credited with the invention, in the first quarter of the fifth century, of the classical peplos with its regular folds like the fluting of Doric columns; Ionian drapery inspired this transformation of the sculptural rendering of the Doric garment. Female figurines in peplos are principally represented, until shortly after 450 B.C., by the series of mirror supports which is recognized as belonging equally to Argos, Sicyon and Corinth.

A rich group of female mirror supports gives a useful review of the evolution of this essentially, if not uniquely Peloponnesian type, and in it we can begin to distinguish features of style

peculiar to individual studios. The earliest motif still respects archaic frontality: parallel legs, left hand raising a fold of the peplos at the height of the thigh. This gesture of the hand with the drapery remains until the middle of the fifth century, but before the tradition is abandoned the frontal pose is modified by advancing one leg bent at the knee: this movement naturally interrupts the strictly vertical fall of the peplos folds on the side where the leg is freed. The resulting asymmetry on the lower part of the figure did not trouble the artists of Argos; it does nothing to detract from the steadiness of the stance, the drapery remains as wide at the base as over the thighs under the arch of the tuck at the waist. No piece is more characteristic of Argive style than the *Berlin worshipper* (formerly called the *spinner*) (Pl. XII, 4), although she dates from close on the middle of the fifth century and is already affected by Attic grace.

A large series of these figurines, mostly mirror supports, has an arrangement of the peplos folds under the tuck evidently designed to emphasize the vertical axis and the frontal stance and thus to avoid the asymmetry when the one leg is bent. A central group of folds, generally two, falls vertically between the legs. On the legs themselves the material of the garment is indicated merely by rounded oblique incisions which in a few later examples become fully modelled folds. This symmetrical arrangement of the draperies has been attributed to the Sicyon studio and it is true that it harmonizes well with those features of Sicyon style which we have already defined (Pl. XIII, 3).

We may wonder what part Corinth played in the production of these draped female statuettes. It must have been considerable, especially in mirror supports. We know that in Corinth the production of ornamented vases and other utensils of bronze was no less active in the Classical and Hellenistic periods than it had been since the early Archaic period. The majority of the Peloponnesian figurines in Ionian costume (chiton and himation), and earlier than the peplophoroi, should no doubt be attributed to Corinth (Pl. XI, 3), for the latter maintained constant relations with Ionia and the eastern world. It is worth recalling, however, that the earliest surviving specimen comes from Sparta (Berlin Museum,

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middle of the sixth century B.C.). One of the most characteristic pieces is a statuette of *Artemis* found at Olympia; here the himation is treated, like the chiton, without modelled folds; a few incisions indicate the movement of the material and the borders are emphasized by a band decorated with an engraved key-pattern. Draped thus the elegant silhouette is strongly reminiscent of some of the female figures found on the great Corinthian vases of the mid-sixth century; for example the *Iole* on the *Eurytos krater* in the Louvre. The bronze is, however, probably some twenty years later in date than the vase (Pl. XI, 2). Much the same treatment of the drapery, similar incisions and even the same drawing of the sharp-featured face are found on statuettes of *Zeus standing* or *seated* which belong to approximately the same period and are plausibly attributed to Corinth.

The statuette, No. 141 in the Louvre, probably a mirror support, was found in Albania and belongs to the well-known type of *kore* of the second half of the sixth century. She is in Ionian costume with chiton and himation draped obliquely across the breast. The Corinthian style can be discerned in certain features: the elegant line of the silhouette, the linear clarity of the drawing chiefly rendered by incised lines, which is a foil to the plastic treatment of the few folds of drapery. The latter is decorated with a key pattern along the borders and with crosses scattered over the turnback of the cloak. But the heaviness of the facial features and the stiff attitude suggest rather a colonial imitation of Corinthian style (Korkyra or north-western Greece). The same may be said of the statuette No. 140 (in the Louvre), also an Albanian find but in an earlier style. The first of these two pieces is dated about 500 B.C. and the second twenty or thirty years earlier (Pl. XX, 1).

ÆGINA

Let us now examine briefly a small group of bronzes coming from diverse workshops, although they are a closely related group. They show how difficult it is to form homogeneous series and attribute them to definite centres of production.

As a starting point we can take a male statuette, a *kouros* or *Apollo*, in the *Modena* museum (Pl. XIV, 2). It was, rather curiously,

first thought to be Etruscan, then non-Roman Italian; lastly Payne, much more justifiably, has related it with the *Fighting Herakles* of Perachora. The structural similarities are undeniable, especially in the rendering of the muscles of the torso. But the *Modena kouros* is plumper and fleshier, and the modelling is rounder and more clearly articulated; Payne rightly concluded, as the writer had himself done independently, that it is by the same hand as a *female mirror support* in the Louvre which perhaps comes from Thebes (Pl. xv): the facial features are the same, as are the shape and eccentric position of the ear, the fine working of the hair bound by a diadem of large beads and, most markedly, the roundness of the modelling and the precision of formal detail. Two other *female mirror supports* are closely related by form and detail to that in the Louvre, one in the Boston Museum, the other in the Hermitage Museum in Leningrad (Pl. xiv, 1); these are both attributed by Langlotz to the Aegina studio, although he places the Louvre figure in Sicyon. The *Modena kouros*, leaving the possibility of an italiote source aside, must have come from either Corinth, Sicyon or Aegina. The author's choice is Aegina, since the kouros is carved, like the warriors on the pediments, with the same proportions, the same drawing of the musculature (taking into account that there is less detail on the statuette than on the pediment figures which are larger than life), the same diadem of small curls round the brow, and the same cast of facial feature. The two flying Eros figurines placed on either side of the Boston mirror support belong to the same type, and the woman herself, whose face bears a sisterly resemblance to the kouros, justifies her attribution to Aegina by stylistic details which relate her to the Athene of the pediment. Furthermore, although they are as late as the beginning of the fifth century they are still dressed in Ionian costume, unlike the female mirror supports of Corinth or Sicyon who wear the peplos, and like the two Athene figures on the pediments, with chiton and himation on the Boston and Leningrad supports and a chiton alone on that of the Louvre. (There are two other female mirror supports in the same style wearing the chiton only, but differently arranged, with a long tuck, in Athens and Dublin.) These four statuettes, too, all show

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the same kind of rather stiff technical perfection found in the figures on the pediments of the temple of Aphaia, which are about contemporary. If this suggested attribution is correct we have in this small group of figurines an interesting corroboration of the fame of the Bronze workers of Aegina in the late sixth and early fifth century. The relations of Aegina with the creative centres of the north-east of the Peloponnese seem clearer. A female mirror support, nude but for a narrow loincloth, discovered at Aegina and dating from the second half of the sixth century, gives evidence of an earlier connexion with Sparta; it is a well proportioned figurine, sensitively modelled and supple, standing on a tortoise, the famous emblem of Aegina coinage. It provides a valuable example of the activity of the local bronze workers before the end of the sixth century.

ATHENS

Bronzes found in the excavations on the Acropolis are sufficiently numerous to constitute a large Attic series, including some pieces of rare quality. The holy places on the heights of Athens received offerings from many parts; none the less the majority of the bronzes are of local manufacture and their style is recognizably one with that of the marble sculptures from the same site.

A small metal industry clearly started in Athens in the Geometric period: it probably produced the figurines of warriors like those found at other sites such as Olympia. Their successors appear, nude or just helmeted, in the late seventh or early sixth century. They have the same frontal posture and same narrowness of silhouette, but the body is thicker and the face, framed in the 'wig' cut off at the shoulders, is modelled with large features. Some of these figurines aim more at movement than at balance, for the legs are apart while the arms are raised forward. The search for movement seems not to have led to any immediate results; doubtless this check was due to the influence of large marble sculpture which was beginning its superb development in Attica early in the sixth century. It recurred again towards the end of the century in the specifically Attic type of *Athene Promachos* and the appearance of various athletic motifs.

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Large Archaic sculpture in Athens had a rich succession and a large variety of types. None the less its abiding features are found in the bronzes of the second half of the sixth and the early fifth centuries. The faces have a characteristically full oval form, generally rather wide at the base; the brow is nearly always prominent, harmonizing with the curve of the jaw; the animation of the features, derived from the Ionian smile, has great variety of expression and gives to the face a sort of radiance, achieved by a subtle relating of the movement of the mouth, the arching of the brows and the drawing of the eyes. The shape of the body, which is generally slender, betrays the same quest for proportion; it has none of the breadth of shoulder, nor the rigid symmetry, nor the powerful articulation of the Peloponnesian types. The modelling is firm and tense, more sensitive to movement and suppleness of line than to the geometry of structure. A few modest kouros figurines of the second half of the sixth century already belong to this type, like the male *patera supports* whose beginnings are scarcely earlier than the end of the sixth century and who continue, as already described, into the first half of the fifth. These latter are remarkable for the harmony of their proportions, despite the simplicity of their modelling, the rigidity of the pose and the retention of the long hair which all keep them within the Archaic convention right to the threshold of the Classical period (Fig. 12).

The statuettes of *athletes at rest*, one from the last years of the sixth century, the other twenty or thirty years later, are typical examples of the Attic style during the period when the Archaic was giving way to the Classical style.

The first, in the National Museum at Athens, was found on the Acropolis, and is related to the earliest male *patera supports* from the same site (Pl. xvii, 2); his stature seems short because the legs are rather short in relation to the trunk. This impression, or perhaps rather one might say this small fault in proportion, has led an expert like Langlotz to deny it to Attic art and to credit it to some hypothetical workshop in the north of the Peloponnese (Cleónai). There are, however, an elasticity in the sloping line of the shoulders answering to the slope of the groin, a slightly

asymmetrical movement of the arms, a delicate suppleness in the modelling of the torso which lead on to the *Kritios youth*, and the face sets the Attic seal on this lively work. It bears a striking resemblance to the *Rayet Jacobson marble head* in the Glyptothek Ny Carlsberg in Copenhagen; it has the same cap of short hair making a roll round the brow and falling low to the nape, the same wide arch of the eyebrows and large eyes lighting up a face animated by the same slight smile.

The second statuette from Attica, in the Cabinet des Medailles (No. 928) has deliberately crossed the boundary out of Archaism; it has even gone beyond the *Kritios youth* and evolved as far as the great Early-Classical *Apollo*s: it cannot be earlier than 470 B.C. The general stylistic features are the same, but the slight *déhançement* freeing the right leg which turns away, gives the pose a suppleness and ease which is in contrast to the weight and stiffness of the Peloponnesian types. The regularity of the profile and the fine features of the face, framed in the crown of hair rolled round a band, are found frequently on the pictures of young men decorating Attic red-figure vases of the same period.

The types of male figure in movement reappear in Athens in the first quarter of the fifth century, as they do in the Peloponnesian studios. Excavations on the Acropolis have yielded several examples, generally of small dimensions. A figurine of a *giant brandishing a stone*, 10 cm. high (National Museum, Athens, No. 6592) is related to the types of *Zeus with thunderbolt* and *Fighting Herakles* which are widespread in the Peloponnese, but the form of the body, the audacity of the pose and the fine detail of the musculature bring it close to the *Herakles subduing a stag* on a metope of the Athenian Treasury at Delphi. A statuette of the *jumper* (Athens, No. 6614) has the same elegance of form and movement and in the next chapter we will examine a statuette of a *discobolos* no less characteristically Athenian in manner.

The study of female types has recently been advanced by Mme Papaspyridi Karouzou, who has demonstrated the important contribution of the Athenian bronze workers to mirror production, referring particularly to a deliciously original model of female support (Pl. IV, 1): she is in Ionian costume, which she has

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donned with an ease and freedom that are all her own, and she is standing on a stool carried by two foals; the invention of this motif is more appropriate here than anywhere else, in the city which has left us the finest images of horses, both the Archaic statues of the Acropolis Museum, and the Parthenon friezes. The same natural richness of invention is seen in the variations of the Athene type, which was particularly dear to the artists and craftsmen of Athens. In the first half of the sixth century the goddess is tightly draped in a peplos without folds, but unlike the flat and rigid Spartan model the Attic is rounded to follow the form of the body and the drapery is decorated with fine engraving. The Ionian costume appears after the middle of the century, and towards its close begins a series of statuettes of a *fighting Athene*, the *promachos*, whose various representations are comparable to the succession of *kore* on the Acropolis. The goddess is represented sometimes full face, sometimes in profile; the face and the drapery are full, or the face is thin and the silhouette narrow. The most elegant is closely related to the famous *kore* No. 679 (Pl. xvii, 1). Lastly there is a large group of appliqué winged figurines, some male, but mostly female, with the same variety of movement and draperies which continued some way into the fifth century the traditional motif of the 'kneeling race' (Fig. 14), which was in fact an Archaic representation of flight.

SAMOS

The example of Samos is an object lesson in how much our knowledge of antique bronzes is dependent on the chances of excavation. From ancient texts the names of Theodoros, Telekles and Rhoekos were known as Samian bronze workers, pioneers in the art of casting. They were traditionally credited with the introduction into Greece of the methods of hollow casting learnt from the Egyptians. But before the excavations by the German Institute in Athens on the site of the Temple of Hera at Samos, our idea of the style and techniques of the Samian bronze industry was of the vaguest. The excavations have not brought to light all the information one might have hoped, since there was no evidence of hollow casting; but a group of statuettes of various types

reveals interesting technical details and allows us to follow the evolution of style during the sixth century in this outstandingly important Ionian centre.

The earliest piece is still in *sphyrelaton* technique (bronze leaf hammered on to a wooden matrix and fixed by rivets), a technique practised in Crete with greater mastery in the seventh century, as we have shown. This is the bust of a *large female statuette*, in 'daedalic' style, probably made of two pieces joined at the waist and perhaps representing Hera; this bronze does not seem to be earlier than the beginning of the sixth century. It is noticeable that the face of this rather rough and battered sketch is already a Samian type, perhaps the most constant of all archaic types, with hardly a variation during the whole of the sixth century. It is very wide at the brow and narrows down to the chin, consequently the eyes are wide and far apart and the mouth is narrow; but the nose, narrow at the top and thick at the base, make a contrary scheme in the middle of the face. The profile is no less characteristic: the forehead slopes away in line with the protruding nose, and the chin recedes.

Another peculiarity, more noticeable on later statuettes, is the disproportionately large volume of the head: the whole height of the body is generally no more than five times that of the head. This is a sign of oriental influence; it is found on other Ionian figurines of bronze or ivory, especially those from Ephesus whose close association with the art of the Near East—Syria, Phoenicia and Mesopotamia—is well known.

The shape of the body is supple and sometimes rounded to the point of softness; this tendency, more noticeable on marble statues, developed in the second half of the sixth century. The pose of the earliest little bronze *kouroi*, before the middle of the century, is more lively than in the later period. The earliest, belonging probably to the first quarter of the sixth century, has his left leg boldly thrust forward and holds out his arms in front, bent at the elbow.

In the following period (about the third quarter of the sixth century) the movement ceases or slows down. Some figurines are even standing at attention; among these there is a group of

three: a *draped woman between two nude men*. The best specimens have harmonious proportions, full and elastic forms which give the feeling of breathing flesh; the effect of the great contemporary sculptors is certainly at work; and it can be seen, too, how the Samian type differs from the Peloponnesian types which are more strongly built and much more clearly articulated (Pl. xviii, 3).

Belonging to this group is a draped female statuette found at Olympia, forming one of the supports of a tripod imported from Samos (Pl. xviii, 5). She reproduces a type of draped female figure known from several marble statues, the best of them the *Cheramyas Hera* in the Louvre. The bronze figurine wears no more than the long and full Ionian tunic, its many folds marked by fine incisions. The gesture of the left hand raised to the breast refers back to the most ancient oriental symbolism, but the right hand raising a handful of folds inaugurates the depiction of a real movement which is constantly repeated by Archaic images of *kore* – but it soon lost its truth in conventional preciousity.

The great importance of this statuette is that it is an intact example of a type known in marble only in mutilated and headless statues. Furthermore its form perhaps shows that bronze technique was already influencing work in marble. The term column-statue has been applied to the *Cheramyas Hera*, one of the most beautiful marbles in the Louvre, because of the cylindrical form of the lower part of the body. This shape and that of the bronze statuette are however better explained as a result of the use of a mould. Some Ionian or Rhodian terra cottas demonstrate this: the widening at the base being intended to make the hollow body stand more firmly. Moreover the manner in which the folds are treated, both on the Louvre statue and on statues in the Samos Museum, with fine parallel incisions, are a transference to marble of a chiselling technique proper to metal. One may well therefore accept the opinion held in ancient times and later abandoned, that monumental statuary in bronze initiated by the Samian masters Rhoikos and Theodoros, gave the example to the marble worker Cheramyas, and not vice versa as is generally thought nowadays. The bronze statue of the Elamite queen Napir-Asu with its

bell-shaped skirt cast hollow in a single piece by *cire perdue* is after all nearly a thousand years earlier. There is nothing surprising in the fact that the bronze casters of Samos, towards the middle of the sixth century, should have learned from Egypt (as tradition has it) a technique which had been long practised in the orient, and introduced it into their native land.

Alongside the generalized types of *kouros* and *kore* the Samian bronze casters adopted several individual types, *flautist*, *runner*, *banqueter*, and *horseman*, of which examples are known from other art centres. This makes possible some enlightening comparisons.

The most curious of these figures, and the rarest, is the *flute player* who is more often male than female (Pl. xviii, 1). The example from the Heraion dates from the third quarter of the sixth century, and so belongs to the age of the great Samian bronze workers. The musician holds the double flute to his mouth with both hands. He is dressed in a long tunic which bulges at the front and is caught above the hips by a belt. It is enlivened only by a few folds under the arms and between the legs. The left foot is slightly forward. This statuette is unusually large: 42 cm. high. Nevertheless it is cast solid, a technique simpler than hollow casting. The latter is not used for statuettes of comparable dimensions until the following century. One detail is noticeable on several Samian pieces: the eyeballs, now disappeared, were added in some brilliant material.

It is interesting to compare the Samian flautist with the statuette reproducing the same type (Athens National Museum, No. 25) found at Dodona, which seems likely to have issued from a Peloponnesian workshop, probably Spartan. Although this piece shows signs of having been imitated from an Ionian model, the stiffness of the pose, the naturalism of the face with puffed cheeks, the observant detail on the flute case hanging on the left arm are in striking contrast with the long, freely arched line and inspired vitality of the Samian silhouette.

No less instructive is a comparison of three figurines of riders, now parted from their horses, all of which probably date from the last quarter of the sixth century. One of them is Samian (Pl. xviii, 2) and the other two versions come from the Peloponnese.

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The *small horseman of the Heraion* of Samos belongs to the same race as the flautist. He has a thin triangular face, wasp waist, thin legs and a supple easy posture. The arms held tight against the body indicate a date for this piece slightly earlier than for the two others. One of these, found at Dodona, wears a short clinging jacket, such as is worn by Arcadian shepherds or Hermes figures. The fringe of straight hair on the forehead, the square face, coarse features and the free movement of the body are all proof of this connexion. The pose of the third rider is designed with a symmetry so exact, almost geometric, that it suggest a workshop in the north of the Peloponnese, most likely Sicyon (Pl. xviii, 4).

The *banqueter* model admits of equally interesting comparisons; the Samian type (Pl. xiv, 3) with the Tarentine (Pl. xxi, 5).

MAGNA GRAECIA

The large Greek cities in southern Italy and Sicily, at any rate the more active ones, certainly had bronze workshops. The abundance and quality of the coinage of this occidental Greece, a by-word for prosperity, are proof of a flourishing art industry. The number of bronzes from this region, however, remains small, especially from Sicily, whereas large numbers of terra cottas have been discovered. This being so, it is not easy to allocate to more or less hypothetical studios the few examples we know, except perhaps in the case of some utensils with figure decoration such as mirror supports.

Generally speaking the features distinguishing the products of the west from those of Greece proper are the following:

1. The number of figurines which belong, or were made to belong to utensils is larger.
2. The evolution of style is always later, and in some cases the delay amounts to several decades.
3. The quality of the products, apart from a few important exceptions, is noticeably inferior. This combined with the time-lag, can make dating difficult.
4. The concern for anatomical exactitude and proportions is

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markedly less, and this results in an approximation of the types represented to Etruscan rather than to Greek style.

5. In compensation there is greater freedom of pose and gesture, and the movement is more expressive and energetic.

EPIZEPHYRIAN LOCRI

A fair number of discoveries, principally in the necropolis of the city and on the neighbouring site of Medma-Rosarno, bear witness to the activity of the bronze workers of Locris. The majority of the statuettes belonged to utensils; and of these mirror supports are predominant. Locris was founded in the seventh century by Aeolian immigrants and later received a large Ionian contingent, which may have been added to during the Persian invasion at the end of the sixth century. The variety of types to be found in the products from Locris, whether of terra cotta or of bronzes, is probably to be explained by the important Ionian element in the population, a phenomenon unusual in Magna Graecia.

The majority of the bronze statuettes from Locris served as mirror supports or decorated either the rims of vases or utensils. There are few pieces of a quality comparable to those from the great Greek centres. A male mirror support in the Louvre can be taken as an example of the average product of the Locris workshops in the first quarter of the fifth century (Pl. xx, 2). Such features as the over-long torso with indefinite articulations, the flowing, rather soft forms, the inequalities in length or width of the limbs are found on other male figures, either older (these are very rare) or more recent, when they have abandoned the pose with two arms symmetrically raised. These latter have a freer and more lively attitude, contrasting with their function: a definite déhanchement, the feet slightly apart, diverging arm gestures. The face of the Louvre mirror support, placid and inexpressive, is equally characteristic of what may be called the Locrian type: a wide face, rather heavy features, long and narrow eyes; the crown of hair simply rendered by vertical lines is found even on female heads, except the latest.

Among the male figurines an emaciated *kouros* in the Cabinet des Médailles (No. 922) belongs to the sixth century and has the

same build as the mirror support, whereas a statuette in the Louvre, from the first decades of the fifth century, is at a more advanced stage of evolution of the same style. The later statuette has a strange coiffure, almost Gothic in appearance, which might throw some doubt on the figure's authenticity; but one of the pretty terra cotta heads found by Orsi in his excavations at Medma-Rosarno has exactly the same hair (Pl. XXI, 4).

The variety of feminine draperies from the end of the sixth century to the middle of the fifth is surprising; it reflects the diverse influences acting on the workshop at Locris. All the faces retain the placid or sulky expression of the local type, more marked on the bronzes than on the terra cottas. The earliest fashion of drapery, the chiton and oblique himation of Archaic Ionian costume, is best seen on the statuette in the Berlin Museum (No. 7429) found at Paestum; the inscription shows it to be a votive offering from young Phillo who had herself represented as a kanephore standing on an Ionic column of which the capital survives. Next come the figurines in Peloponnesian peplos, and last in the series appears the Attic peplos with a belt over the tuck. There is even one exceptional female mirror support wrapped in the cloak of the famous sculptural type known as 'Aspasia' (Pl. XXI, 2).

The stature of the female figurines, unlike the male, is if anything, rather short, and the disproportions, veiled by the drapery, are less apparent, except that the arms are generally too short.

There is a group of slender figurines of the late sixth century which can be attributed to Locris: they presumably decorated the rims of large bronze vases and are Silenus figures and maenads in clinging tunics, represented in a restrained dancing attitude, their arms apart, their legs slightly bent – expressive silhouettes, although given only summary modelling. These figurines imitate Ionian prototypes, as do those representing male or female banqueters, half reclining on the elbow; these, more carefully worked and of a later date, could also be attributed to Locris, but their squarer forms and the frequency of the banqueter type in the Tarentum terra cottas makes this centre a more likely source. It was famous for its bronzes in Antiquity, but its products are now very little known.

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TARENTUM

Tarentum was founded by Sparta in 708 B.C. and remained in close contact with its mother-city. One of the rare Archaic bronzes known certainly to have come from Tarentum is a *woman in peplos*, earlier than the middle of the sixth century; the forms are squat and rough, the movement vehement. The head is large and the drawing of the face with its large eyes and widely arched eyebrows is a rounder and more brutal edition of the Spartan type. The 'mistress of the animals' in the centre of the plastic decoration of the *Graechwyl hydria* (Pl. II, 2) belongs to the same type, and possibly to the same workshop. A small *kouros* in bronze found at Tarentum has the same broad, coarse-featured head. Thus there is, at about the middle of the sixth century, a Tarentine type drawing its inspiration from the art of Sparta, its capital, but following it with a definite time-lag.

An often-noted absence of homogeneity makes it difficult to define the Tarentum style. This lack of unity or continuity is probably only illusory, for we have so little material that we cannot trace the evolution of the style, which certainly changed profoundly at the turn of the century. After the beginning of the fifth century we have an abundant series of terra cottas, more varied and much more carefully worked than those of the earlier period, and these allow us to attribute to Tarentum bronzes found in the locality or having no certain attribution. The figurines in terra cotta are characterized by a supple plump modelling and by a sweetness tinged with melancholy in the face. It cannot be said precisely what influenced this change. Certainly the prosperity of the colony and the famous gentleness of the climate was softening the tough race of Spartan founders, but a more decisive influence came from the imported elements from Ionia and an even stronger one from Attica, first in the shape of models, and then probably of artists and craftsmen. The most usual type is the *banqueteur* (whether human or a divine Dionysos(?) we do not know). We also meet him in a series of small bronzes of a rare delicacy, made to decorate the rims of large vases (Pl. XXI, 5).

The Silenus type was made at Tarentum, as in other workshops of southern Italy or Sicily, after Ionian or Peloponnesian models,

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in all the various poses to which he lent himself as a humanised animal daemon. A *walking Silenus* in the Louvre (Pl. XXI, 1), carrying a drinking horn, is from the late sixth century, still very much under Spartan influence and may be from Tarentum. The fact that it comes from Apollonia in Illyria does not contradict this attribution, for the Tarentines entered early into commercial relations with the Corinthian colonies of Epirus and Ilyria.

The decoration on the *Graechwyl hydria* and the *Metaponte tripod* show the taste of the Tarentine bronze workers for animal art (Pl. II, 1). Here again, between the earlier and later example the change in their style can be noted, passing from a brutal roughness, almost caricature, to a style of elegance and suppleness, which has yet not lost that almost baroque taste for complicated and superabundant ornament which persisted in the great colonial city.

Other centres contributed to the art of Magna Graecia. It has recently been plausibly suggested that the famous *Vix Krater* (Châtillon-sur-Seine Museum) was made at Rhegion, a colony of Chalcis (cf. Chapter II). Here need only be mentioned the veiled female statuette which was placed in the centre of the lid of the great krater (Pl. XXI, 3); similar silhouettes are found on Chalcidian vases of about thirty years earlier. From the objects found in the Vix tomb and the style of the krater itself, the date cannot be judged earlier than the last quarter of the sixth century, yet the stiffness of the statuette relates it to Spartan types of the middle of the century: this chronological inconsistency can only be explained by attributing it to a colonial workshop in southern Italy.

CHAPTER FOUR

THE CLASSICAL PERIOD

FIFTH AND FOURTH CENTURIES B.C.

As we have already shown, the different workshops of Archaic Greece continued to vie with each other in producing small bronzes (which they did in large numbers) until the middle of the fifth century B.C. After that, production diminished drastically; there are no more paterae or mirrors with human supports after this time. In the fourth century, ornamental figurines in the round were replaced, on large bronze vases and on mirrors, mainly by appliqué reliefs.

The publications of the excavations at Greek sites where the finds of bronzes were richest, at Olympia, Delphi, Dodona and the Acropolis at Athens, show how surprisingly rare bronze statuettes became after 450 B.C.

The testimony of the excavations is borne out by the collections of antique bronzes in the large museums, where the proportion of Classical pieces (second half fifth and fourth centuries), as compared with pieces of the Archaic and Early-Classical periods, is scarcely more than, and often less than 1 : 10.

After their scarcity, another important factor is the direct influence of the types of large sculpture on the Classical bronzes; an influence which continues in the Hellenistic period. The freedom of small sculpture in the Archaic period is easily explained: large bronze sculpture appeared fairly late, with the exception of examples worked in *sphyrelaton* which were too dependent on their method of fabrication to serve as models to be copied by modelling or casting. Thus well after the year 500 the traditions

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of the various Greek workshops continued in that spirit of free competition which animates Archaic production in all spheres. One of the most striking examples of this spirit of independence is the diversity of interpretations of the *Fighting Zeus* or *Herakles*, or of female mirror supports in the first half of the fifth century.

Be it noted, however, that this independence and diversity only operated within the limited framework of traditional types. But from the Early Classical period onward a number of statuettes escape from this tradition and draw their inspiration more or less freely from the examples of large sculpture; one can imagine that small-scale reproductions of statues of athletes were made for placing in sanctuaries of the visitor's homeland. At all events, these reproductions continued to be made during the Classical period and a number of statues of divinities were likewise copied.

Thirdly, a fair number of the large statues were reproduced, either faithfully or with various modifications, in the Roman period. There is a danger of confusing the statuettes more or less contemporary with the creations of the great Greek sculptors with reproductions manufactured several centuries later for a Roman clientele. It is not always easy to distinguish these two groups of small bronzes; for although the Roman group, which is much larger, includes a large number of mediocre pieces it contains some of a rare quality. This question will be briefly discussed at the beginning of the first chapter of Part III.

Early-Classical antecedents. A number of statuettes, made between 480 and 450 B.C., are markedly different from the traditional types and show an originality and balance of composition which points unmistakably to some great sculpture.

However, we must here bear in mind a special phenomenon which is explicable only by the persistence of workshop traditions. Several Early Classical statuettes transpose their interpretation of the model into the style of their own workshop; this transposition is most noticeable when the model reproduced is from a different art centre.

Here are two examples, taking first the *discophoros* in the Metropolitan Museum of New York (No. 78); the general proportions,

massive but relatively small head running vertically into the nape of the neck, and the broad chest protruding over the abdomen all relate this vigorous athlete to the *Harmodios* by Kritios and Nesiotes; yet the strongly arching thighs, the rounded buttocks and the short curve of the groin are Spartan features. We are thus led to suppose that a Spartan craftsman has interpreted the model of Kritios.

The second example is a different type of discobolos, and here the matter is not simply conjecture based on a stylistic analysis. We have for our argument a bronze statuette and two marble torsos all reproducing the same model. One of the marbles, found at Delos, is contemporary with the original, the other is a replica of Roman date. The two torsos are certainly closer in structure to the original, which is attributed hypothetically to Pythagoras, or to some Ionian artist. The more supple pose and the body narrowing sharply to the waist show the statuette to be the product of an Attic workshop (Pl. xvii, 3).

To balance the argument we will quote a statuette whose style seems to be attuned to the style of the model it is imitating: an *ephebe performing a libation* (Pl. xxii, 4); the tension and reserve of energy shown in this simple gesture seem to belong to the style of the athletic statues of Pythagoras, known to us from the *discobolos Ludovisi*, a replica in marble in the Terme museum. This small bronze was found in Sicily, at Aderno near Rhegion where the illustrious Samian sculptor was established. The statuette has a vigour of composition which accentuates, not without rigidity, the tension of muscles in movement. The influence of master sculptors can be seen making itself felt on the last stages of types whose function kept them within traditional lines. Thus the restrained but expressive gesticulation exemplified in the *athlete of Aderno* enlivens several ungainly male statuettes – mirror supports from Locris. We have already quoted the female mirror support from Locris who has adopted the drapery of the famous statue called *Aspasia*. Another *female mirror support* coming from the same district, possibly from the same workshop, wearing a peplos, is of unusual delicacy of workmanship despite its caryatid verticality; it has certainly taken its crossed rhythm from a model of large

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sculpture, with the shoulder raised at the side of the free leg, and the ample diodumene gesture with the hands raised to the hair (Copenhagen, National Museum).

These examples show how before 450 B.C. the original creations of renowned masters exercised a growing if varied influence on the smaller works. But the mark of the local workshop is still apparent, even if it is not always possible to locate the centre from which some particular piece issued.

Classical Statuettes of the second half of the Fifth Century. After about 450 B.C., local styles rooted in long tradition disappear, except for the products of a few old-fashioned workshops, for instance in Arcadia and in Magna Graecia. The special types to which each local tradition was devoted gave way to models furnished by the great sculptors.

The Greek artisan, often a true artist, did not however abdicate his freedom of interpretation and execution. This freedom expressed itself in different ways.

In the first place there was some survival of local character, such as may be observed in a comparison of two statuettes in Polyclitean style which are almost contemporary. Each gives its own version of the type; one, found at Sicyon, has a local flavour in the slightly oversized head, the stiff pose and movement of the left leg and the head, and the telling simplification of detail on hair and musculature (Pl. XXIII, 1). The other, of unknown origin, is, on the contrary, an exceptionally close reproduction of the master work, giving it a special value for the study of Roman replicas in marble or bronze which derive from the same type or from a related athletic type. The author of the statuette has done no more than modify the gesture of the right hand, which holds out a patera instead of gripping the discus, turning an athletic into a ritual act (Pl. XXIII, 4). Another example is the gracious *Elgin Athene* who carries an owl on her outstretched right hand (Metropolitan Museum, New York). It shows all the freshness of Attic artisan work in about 460 B.C. The arms are too long, the drapery is treated broadly, but the hair is finely chiselled.

The *Sicyon youth* transposes an unknown model and the *Louvre*

athlete reproduces the *discophoros* of *Polyclitus*. A third variant is a free imitation of a known model surviving in several marble replicas, all over lifesize. The statuette is only 8.5 cm. high. It is a goddess type (Pl. XXIII, 2), still close to the severe style, and must have been created shortly after 450 B.C. The statuette differs mainly from the marble replicas in the treatment of the drapery although the general arrangement is the same. The pleats of the tunic are rendered by finely incised wavy lines, while the folds of the cloak are wide, thick and far apart. On the marble versions the different materials are hardly distinguishable, and the folds are arranged with a dry and almost geometric regularity. The style of drapery seen on the statuette, with a similar arrangement of the cloak and tunic, occur again on the latest of the Corinthian mirror supports (after 450: see above, p. 98) and on a terra cotta, probably Attic, of the end of the fifth century. The statuette may thus have been made either in Athens or Corinth. This is also the case with the last example we shall quote of this kind of art in its freest manifestation: a female figurine tightly wrapped in a tunic which is held at the waist with a belt. The details are characteristic. Firstly, the head and chest bend in one movement towards the side of the bent leg, contrary to the compensatory rhythm perfected by *Polyclitus* which became generally adopted after the middle of the fifth century and remained the rule for all sculptures in static pose during and after the Classical period; a statuette of a *youth pouring* in the Louvre, about contemporary with our figurine is a similar contravention of the rule. Secondly, the tunic is decorated with a fine incised pattern, dog-toothing, acanthus, palmettes, lotus flowers, in favour of which the folds are almost completely eliminated. These two peculiarities can only apply to a minor work of art which has no direct reference to any large sculpture. The piece can be dated to the last quarter of the fifth century by the 'lampadion' coiffure and the decoration of the tunic which has parallels in Meidias style ceramics (Pl. XXIII, 3).

Classical Statuettes of the Fourth Century. The fourth century is even poorer in bronze statuettes than the preceding century. It is

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true this was the time when personal luxury was growing to such an extent that Demosthenes denounced it as anti-social, but the statuette as an *object d'art*, not as an offering to a deity, had not yet taken the fancy of the rich as it did in the following centuries. In sculpture money was rather spent on the marble of funerary steles which became quite impressive monuments, or on the metal of superfine utensils: the mirror as we have seen, took a new form and was decorated with engravings and reliefs.

The few bronze statuettes which are certainly of fourth-century date are of a superb quality; they reflect faithfully the current trends of the art of the time.

Fourth-century statuettes, and the larger bronze statues, have all one feature which distinguishes them from those of the preceding century. The lines marking the articulations and separating the masses of the muscles are no longer drawn with the wilfully dry precision of earlier types; the plastic feel for volume and the more pictorial taste for subtleties of expression find their way into sculpture; the forms are not given an abstract reconstruction but are seized in movement and thus in space. The ancient Greeks themselves noted this evolution of Greek sculpture in the fourth century: Lysippus was said to have himself confessed to making men as they seemed to be and not as they were according to the doctrine of his predecessors. This new view of nature appears at the beginning of the fourth century.

A new technical quality dependent on the new vision is found on the statuettes of the fourth century; it lasted into the Hellenistic period. It can be said that in general the touch of the modeller, in earlier periods removed to give a uniformly metallic look to the statuette, is now in evidence, as we shall show.

The naturalistic trend of the beginning of the fourth century certainly originated in the flourishing school of bronzeworkers at Argos. It is represented in the Louvre by a figurine of a *wrestler* or *Pancration athlete* (Pl. xxiv, 3), in style very close to a *dis-cophoros*, known from several Roman replicas, and attributed to Naucydes, a pupil of Polyclitus. In general structure this athlete is in the succession of the Polyclitan type, but the attitude is no

longer one of potential action: with his neck buried in his shoulders, his muscles tensed, the wrestler is about to leap at his adversary. The impression of an impending action is communicated by the play of small shadows giving a sense of mobility to the muscle masses, and by variations in the lines of the articulations, now emphasized, now hardly touched on. The hand of the modeller can be seen precisely in the many and supple transitions from one plane to another; it is seen again in the large curls of the hair, hardly touched with the graver after casting and totally different from the carefully smoothed locks with their finely incised detail on the figurines of the fifth century.

The Louvre statuette shows the striking change in taste at the beginning of the fourth century B.C., and a deeper change which is the emergence of a new vision. The new technique is not an indication of hastier or less careful work, for great care has been expended on it. The arms were cast separately, there are precious inlays as meticulously applied as on the Polyclitan statuette in the Louvre, with silver for the eyeballs and copper for the nipples.

The *Poseidon of Dodona* (Pl. xxiv, 2) in the Berlin Museum, dated to the middle of the fourth century or shortly afterwards, shows us a bronzesmith working apparently much in the same way as the makers of the best pieces of the fifth century, with its perfection of casting, finesse of detail and burnished surface. There are two differences, however; one is the extraordinary mobility of the muscles, despite the static pose, rendered by the undulation of their contours and the hollowings of the skin over them. The second is the manner of treating the hair and beard. Here we meet another aspect of the modeller's technique in the rough and irregular strands, contrasting with the polished smoothness of the naked skin, giving the feeling of work in clay or wax rather than in metal. This technique was born of the naturalistic trend at the beginning of the fourth century and was also used in large-scale sculpture, as can be seen in the *athlete with the strigil* from Ephesus, in the Vienna Museum; other large Greek bronzes of the fourth century, originals or Roman replicas, show that the treatment of strands of hair or beard with carefully chiselled detail was still in favour.

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It is not known whether the *Poseidon of Dodona*, which has the flavour of an original work, was directly modelled on a large sculpture or not: the slender proportions, dancing rhythm and the superb ease of the pose seem to point rather to an Attic sculptor (Lcochares?) than to Lysippus.

Several nude statuettes of *Aphrodite* belong to the school of Praxiteles and have a stylistic quality which allows them to be considered as Greek work of the fourth century. The least debatable attribution, in the author's view, is a statuette found at Thera, now in the Berlin Museum. The pose is close to that of the *satyr pouring* of Praxiteles, but it is more supple and the asymmetry of the hips is greater: the goddess, holding a mirror in her left hand arranges her hair with the right. The surface has corroded but this does not prevent our appreciation of the elegant precision of the pose and proportions, the subtle undulation of the contours and the delicate fullness of the forms, especially round the abdomen and thighs. Apart from these plastic qualities there are two certain indications of its being an original of the fourth century: the shape and very simple profile of the round plinth (cf. p. 72), and the 'gable' style of the hair, rising in a triangle above the brow, a fashion appearing in Greece shortly before the middle of the fourth century and ceasing shortly after 350 B.C. (Pl. xxiv, 1).

Several sculptural types attributed to Lysippus have been reproduced in varying dimensions from small statuary to the original size, but most often they are Roman replicas. This is not the case with a large statuette in the Louvre (26 cm. in height) representing an unbearded *Herakles* who holds the apples of the Hesperides in his left hand and the club (now disappeared) in his right. This bronze has the added interest of being a comparatively rare example of hollow casting; the left leg is broken at the middle of the thigh, and we can thus measure the thickness of the bronze which varies from 1 to 3 mm. The vigorous modelling and the drawing of the musculature, the shape of the head, the features, and lastly the pose all offer strong parallels with the *Agias of Delphi* and identify it with the work of Lysippus (Pl. xxiv, 4).

THE HELLENISTIC PERIOD

THE vast territory opened up to Hellenism by Alexander saw the founding of new centres of art; but the Classical tradition, crystallized in the masterpieces of the great sculptors, did not cease to impose its unity on Greek art, and, although workshops were widely scattered and separated by great distances, there is a definite unity of style over the whole Hellenistic world. But the makers of terra cottas and of bronze figures also rediscovered the abundance and variety of motifs which had been available to Archaic art, and a new importance is given to the gesture, expression, and the typical or decorative detail. Statuettes continue to reproduce models of large sculpture, which itself was inspired by the great examples of the past while at the same time creating new types. Beside the divine figures, of which the cycles of Aphrodite and Dionysos are the most frequent, appear effigies of Alexander and his successors, and of orators, poets and philosophers. These latter are, however, rarely reproduced in small bronze sculpture.

On the other hand there was a considerable development of a minor genre of popular and grotesque types.

This copious production continued long after the end of the Hellenistic period proper, which ends about the middle of the first century B.C. It is thus difficult to distinguish the specimens made before from those made after this date. This is a different problem from that of the more or less faithful reproduction, in Roman times, of Archaic or Classical models. This latter is a transfer in time, like modern imitations of Romanesque or Gothic art; the Roman bronze that reproduced a model of the sixth or fifth century B.C. is something uprooted: it may bear the mark of

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its own period but not that of the time of the type's creation. In contrast to this there is no solving the continuity between the Hellenistic art industry and that of the Roman world: the transition was imperceptible. The workshops of Greece itself, of Asia Minor, Syria and Egypt continued to provide for their patrons the models that had been appreciated one or two centuries earlier. One must suppose that some modifications of detail occurred and that certainly the quality of the objects declined in the almost mechanical repetition of the same shapes and motifs. It would none the less be wrong to allow that a slovenly piece of workmanship is necessarily of late date: apart from the mediocre productions of provincial workshops, which are little known, one has only to refer to the coin series of the Hellenistic kingdoms – firmly dated and much more abundant than our series of figurines – to see how the standard of engraving and modelling declined in the second century B.C. and improved again in the time of Augustus.

SYRIA AND EGYPT

The majority of the bronzes surviving from the Hellenistic world, or in the Hellenistic tradition, come from Syria or Egypt. It is not always easy to distinguish the products of one from the other; indeed when the subject is the same they are treated in so like a manner that there is almost no telling how the Syrian differs from the Egyptian example.

Generally speaking Egyptian casting is less careful than Syrian and the metal is of inferior quality; but many Egyptian bronzes seem less well preserved than they really are because they have not been cleaned and cared for. It has frequently been found that once the metal is cleared of a kind of grey-green powdery efflorescence its surface is more or less intact, protected by a healthy, generally rather dark patina. Even if the bronze is really diseased it is rare that the damage has affected the whole surface: this will be dealt with further in the chapter on the conservation of bronzes.

The difference in the two groups is primarily one of preferred themes and motifs. A comparison of two large collections will show this. The Clercq collection was formed mainly in Syria, whereas the erstwhile Fouquet collection was made exclusively in

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Egypt. Both are very rich and more complete than any series of bronzes from the same regions in the large European or American museums.

The Syrian bronzes have a preponderance of representations of divinities. There are, firstly, the Greek gods introduced by the conquerors. The types are refreshed, as with other examples elsewhere, by a more animated pose and after the end of the third century by more luxuriant hair or beard and by elaborations of the drapery. We have a good example of this in the *Zeus* in the Clercq collection (No. 215) which is derived from the *Olympian Zeus* of Phidias: the mark of Hellenism is there in the double knot of hair projecting over the brow, a feature introduced by the iconographer of Alexander the Great, and in the draped line of oblique folds across the legs and the star of wrinkles on the left knee; the eyeballs were inlaid and made of whitish enamel. This last detail is significant. As we have seen, statuettes generally have the eyeballs represented by an inlay of silver; but large bronzes, which only too often now have empty eye sockets, have in several instances (the *Charioteer of Delphi*) eyeballs of enamel, or at any rate of a white paste similar to enamel. We have here, therefore, an ancient technique, perhaps first imported into Greece from Egypt, which passed from large to minor sculpture.

The divinity most frequently represented is *Aphrodite*. Her extraordinary popularity in Syria, as in Egypt, stems from her identification with both the Syrian goddess and with Isis. The Louvre has an example of exceptional quality and probably one of the earliest (Pl. xxvi, 1). The arms were cast separately; it can be noticed that the line of the join is not straight and has an unevenness on either side. The long lines left by the mortise-chisel can be clearly seen on the surface of the bronze where the artist was finishing off the contours on the wax model: the reader will remember the significance of this on several fourth-century statuettes. Furthermore, this being a very carefully worked piece, the chisel marks from retouching after casting are equally visible, especially on the hair. This is treated in an original manner: it is held in fillets to frame the face, knotted at the back with a small cord and spread out over the back in four unequal tresses with

free and graceful movement. This detail relates this small Aphrodite to several works of the middle of the third century B.C., particularly the *crouching Aphrodite* of Doidalses and the *fanciulla d'Anzio* which have the same free treatment of the hair; on this Louvre statuette it is the more remarkable for being combined with a pose borrowed (equally freely) from the type of the *Aphrodite of the Capitol*.

This statuette was found in Saida (the ancient Sidon) and cannot be dated later than the second half of the third century B.C. It is an important example of Syrian work of the early Hellenistic period. Other nude figurines of *Aphrodite* (notably one in the Walters Art Gallery in Baltimore) have rather similar slender forms. In the following century the forms grow heavier and closer to local taste which probably was affected by Egyptian influence; thus the attributes of Isis are often given to Aphrodite both in Syria and in Egypt (and also to Tyche).

The numerous representations of Aphrodite show her gestures performing her ritual toilet: looking in the mirror, dressing her hair, lifting her hair, adjusting her cross-braids, taking off her sandal; none of them profane gestures, for their sacred character is attested to by the fact that worshippers, according to St. Augustin, repeated them before statues of the goddess to serve and honour her. Sometimes a small Eros is figured beside the goddess, but this addition usually only occurs in Roman replicas. These motifs are all met with in Egypt and other regions of the Greek world, but they were most popular in Syria, where there is the greatest variety of forms and poses.

There is one native type among the divinities figured in the Syrian repertoire, a young man who presumably belongs to the Aphrodite cycle and to whom it is appropriate to attach the name of *Adonis*. There are two different versions. The older is represented by a statuette in the Clercq collection (No. 229) (Pl. xxvi, 3): the simplicity of the frontal pose and of the drawing of the drapery, and the characteristic detail of the 'cabbage' in front of the left armpit date it to about the middle of the third century B.C. The long curly hair singles it out as a heroic or divine personage.

The second version is far removed from Hellenic tradition. The special draping of the fringed cloak (also used in the Isis cycle) and the cork-screw curls belong to the oriental world; these details together with the mobility of the pose bring us quite late into the second century B.C. (Pl. XXVI, 2). This date is confirmed by the pattern of the 'cupboard creases' (crossed double lines over the knee and the left breast). The piece was made in two pieces, one fitting into the other at the waist.

Hellenistic art favoured the divine personification of abstractions and of these Tyche (Fortune) was the most important. The most famous representation of this goddess was by Eutychides (c. 300 B.C.), the *Tyche of Antioch*. Several small replicas or adaptations of this statue have survived, probably none of them earlier than the Roman period. The type of *standing Tyche* which was unceasingly reproduced in the Roman world wore a tunic and cloak and held the cornucopia in her left hand and the rudder in her right. She was perhaps created by Praxiteles, and was revived in Alexandria in the second half of the third century B.C. under the aegis of the cult of the Lagid queens; in Egypt she became associated with the Isis type, adopting some of that goddess's attributes (the Hathor headdress, and fringed cloak), and spread in this composite form into Syria and other regions of the Hellenized world.

The so-called *Aphrodite* type, particularly the *nude Aphrodite*, has much the same history. Alexandrian art like Syrian figured her in all the poses of ritual toilet and in some cases added Egyptian attributes: one of the most frequent and most charming is the hair dressed in the form of a sitting vulture, taken from the goddess Nekhbet.

These figurines, however, are most clearly distinguished from fourth-century types by the proportions and forms of the body; there is no doubt that Alexandrian art is directly and visibly under the influence of the traditional Egyptian type: a narrow and short bust, very wide hips, long and full thighs; these are the characteristics, markedly exaggerated, of the Alexandrian funerary terra cottas which have been called 'brides of death' and which perhaps represent the goddess herself.

One of the poses most frequently represented in small bronzes

shows the goddess undoing her sandal before the ritual bath. One of the best examples, in the British Museum, is closely dated: the hair dressing of the goddess is that of Arsinoë III Philadelphë (last quarter of the third century B.C.); this date is supported by the pose and naturalistic style of the type. These figurines of *Aphrodite with her sandal*, with variations mostly in the hair dressing, are found all over the Greek world; but the majority come from Syria and, even more often, from Egypt, as is the case of the statuette in the British Museum and of the best example in the Louvre, both of Hellenistic manufacture.

Hermaphrodite statuettes, directly linked with the *Aphrodite* cycle, are quite numerous in Egypt. They usually have a pose uncovering the private parts: a gesture presumably designed to promote fertility. The *Hermaphrodite* also adopted the pose of the so-called *Callipygian Aphrodite*.

Harpocrates was the son of Isis, and thus of the Egyptified *Aphrodite*, and was one of the favourite subjects of Alexandrian art. He is figured either seated or standing, holding his right forefinger to his mouth; his attributes are a cornucopia in the left hand, the *bulla* hung round his neck, and a double crown on his head. Some very carefully made figurines (one in the Louvre) are directly related in forms and proportions of the body – narrow torso, long and plump thighs – to the Graeco-Egyptian *Aphrodite* already described (Pl. xxvii, 1).

The dionysiac cycle (especially the god, young, vine-crowned; less frequently satyrs and maenads) holds an important place in the little pantheon of Alexandrian bronzes. A group of statuettes from Lower Egypt, composed of the god, a *flute-playing satyr* and two *maenads dancing* or *playing the tambourine*, recalls the famous Bacchic entertainments with which the Ptolemies regaled the people. Despite some carelessness of execution the invention is pleasing and lively. The group can be dated to the end of the second century (Pl. xxx). Other examples of this cycle will be found later.

More fully naturalized, the *Hermes Thoth* bears the lotus petal over his brow; the well-known specimen from the erstwhile Fouquet collection shows the god endowed with a small

cornucopia which he holds in his right hand. This is an exceptional attribute for Hermes, which in the Roman period is prosaically changed into a purse. The intense expression and lively movement of the head towards the right shoulder are influenced by the pathetic style of the late third or early second century B.C. Although it is large (29 cm.), it is a solid casting; the right arm is added and the eyeballs are of silver.

Among Alexandrian religious bronzes the *Priest of Isis* from Erment (in the Louvre, from the erstwhile Fouquet collection; and another example in Baltimore), although in truly Greek style is entirely Egyptian in pose, the strong religious sentiment infusing it, the fashion of the shaved head, the clothing, and the gesture of the veiled hands bearing the vase of Nile water (Pl. xxvii, 2). This masterly work reveals the sharpness of observation which we see at work in the rendering of popular types.

The long-standing and strong taste of the Egyptians for wrestling scenes is well known; Alexandrian art adapted itself to it all the more readily since wrestling, if not the favourite of Greek sports, was one of those they practised with skill and enthusiasm in their athletic contests. Two groups were frequently reproduced, with variations. One shows the *victor bringing his adversary to his knees* by a violent twist of the right arm. There are good reasons for thinking that the group symbolizes the victory of a Ptolemy, probably Ptolemy III (figured in the guise of the god Hermes) over his Asiatic adversary whom the Greek artist has represented as a conventional barbarian type; this would give us a precise date for the prototype of near 240 B.C. The replicas are nearly, if not all, of Roman date.

The second group, which is seen on Alexandrian coins of the Roman period, has perhaps mythological significance (Hercules and Anteus): an athlete, standing firmly, raises his adversary by a vigorous hold round his waist (Pl. xxvii, 3). The example in the Louvre, rather badly preserved but in a very good style, has several interesting details: the *two wrestlers* have each a tuft of hair on the back of the head. This is the mark of a slave or Egyptian athlete; the eyes are inlaid with silver and the lips with copper; the group was cast in two pieces, one of the standing

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wrestler without his arm, the other of the lifted wrestler with the arm of his vanquisher.

The artists of Alexandria showed their indefatigable curiosity, their verve and their ability to seize a characteristic pose and gesture in the extraordinary variety of popular types and grotesques which they represented.

Some comparatively rare subjects lent themselves to creations of real value, without any tendency to caricature, like the *begging priest* and the *wandering trader* (Pl. xxviii, 1). Negroes, Ethiopians or Nubians appear quite frequently (Pl. xxvii, 4). The *little Barbary singer* in the Cabinet des Medailles in Paris is a notable example of the novelty of poses, forms and expression in Hellenistic art.

Most of the other motifs are treated with consciously amusing exaggeration. First there are the theatre and stage comedians: mimers, slave-actors, and a great number of female and male contortionist dancers; then dwarfs, young and old, which had already been portrayed in the art of the Pharaohs. Then there are all kinds of deformed types, hunchbacks with large heads and skeleton-like legs, surprised in the liveliest postures, carrying off struggling cocks (Pl. xxviii, 2), crouched begging, seated with head raised ready to write on a tablet (perhaps Aesop?).

ASIA MINOR

Alexandria was not alone in producing grotesques of this kind: Smyrna has provided a quantity of terra cottas modelled in the same spirit and with the same verve; showing once again the frequent contacts between the coasts of the Mediterranean in Hellenistic times. Very few bronzes of this kind have come from Asia Minor, but this may be simply due to the chances of excavation and discovery.

On the other hand there are plenty of examples of statuettes of divinities; but since they were so widely dispersed in space, and no doubt in time also, it is impossible to know the relative importance, or to define the style, of any one art centre.

The most original and most numerous specimens are dionysiac images.

A small statue, now in the Louvre, found on the shores of the Black Sea (Cyziqúe?) and representing a young *Pan*, perhaps belongs to the last years of the fourth century: it is one of the first examples of this young and idealized type, created in the image of young satyrs when the ancient pastoral divinity of the Arcadian mountains moves from the cycle of Aphrodite to that of Dionysos. The body, sinewy and supple, differs from the Praxitelean tradition in its slender length. The two small goat glands are here placed on either side of the chin, whereas the young satyrs in the third century and afterwards have them in the fold of the neck. This bronze has some interesting technical peculiarities: the hollow casting by *cire perdue* (the thickness of the bronze varies between 1.5 and 4 mm.), was effected in several pieces (see Part I, p. 29). The eyeballs are solid, only the pupils, which have disappeared, being inlaid, and the rough rendering of the hair, retouched with the graver, contrasts with the delicate modelling on the face.

Let us now examine a small group found near Trebizond (Pont): Dionysos, his cloak thrown over his shoulder, raises with his left hand his long hair crowned with leaves and held by the band called a mitra. He is accompanied by a young panther who, like a familiar puppy, is jumping up his left leg (Pl. xxv, 1): this motif symbolized the god's Asian journeyings. The propeller-like movement of the arms, the oblique positioning of the panther, and the roundness of the modelling all accord with the most characteristic tendencies of Greek art in Asia Minor in the second half of the third century B.C.

The *Pergamos satyr* in the Berlin Museum (No. 7466) who doubtless was also playing with an animal, gives us, with his better preserved surface, a clearer picture of the style of bronze working in Pergamos at the end of the third or early second century B.C. The liveliness of the pose is answered by the modelling which is both supple and vigorous and gives a sense of the movement of all the muscles under the skin. The intensity of expression, which was one of the main concerns of Pergamian art, is achieved by an extreme accentuation of the features, bringing the satyr type to the utter limits of animality. The touching up has been very carefully worked, especially in such details as the

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incised marking of the fur of the panther-skin thrown over his left arm, but this has not detracted from the freshness of the wax model, and the piece has all the freedom of treatment of a terra cotta.

The *Eros sleeping* from the Metropolitan Museum (Pl. xxv, 3) has a different charm: a studied grace of pose with less real than apparent naturalism, and an elegant delicacy of such detail as the curls of the hair, and the feathers on the wings. It is catalogued as coming from Rhodes, and this is in keeping with its style (early second century B.C.). It is a large bronze, 90 cm. long, hollow cast by *cire perdue*; the head, arms (the left is missing), the right wing and the drapery were cast separately.

It is more difficult to find the workshop which made the *Jameson Poseidon*. Its find-place is not known (Pl. xxviii, 3). It is one of the best Hellenistic statuettes, solid cast, with great care; besides the retouching with graver for beard and hair and the inlay of silver and copper the correction of casting faults has been carried out with most delicate skill; one patch above the right foot, including the ankle, and another under the left buttock are neither of them rectangular, as is usually the case, but shaped to fit the mended surface. It can also be seen how the base of the (vanished) left thumb had been hollowed out for the insertion of the separate digit. The style is obviously affected by Pergamian sculpture of the first half of the third century, the motif borrowed from Early Classical Zeus or Poseidon types, and in general quite close to the *Harmodios* of the group of Tyrannoctones by Kritios and Nesiotes. The author had first been inclined to consider it of Alexandrian origin, but these associations with Pergamos, including the taste for models of the fifth century, perhaps carry more weight.

GREECE PROPER: ATHENS

Hellenistic bronzes are relatively rare in metropolitan Greece, and the find sites widely scattered. There have been two cargoes of Greek sculptures salvaged from the sea, one off Anticythæra, and one near Mahdia in Tunisia. They both included a fair number of Greek bronzes; the latter cargo certainly came from Athens, for it

included Attic inscriptions, but the port of departure of the first cargo is not known. Both contain the annoyingly eclectic collection of goods carried by a Roman *razzia* travelling to Italy. The Anticythæra bronzes are spread over several centuries, from the fourth century B.C. until the Roman period; the Mahdia ones are however confined to the second century B.C.

The Anticythæra bronzes include a nude statue of a hero or young god, possibly *Perseus* or *Hermes*, which has recently been given a second restoration, thus reinstating its aplomb and value as a fourth century original, possibly Argive; a *Philosopher's head* with the soberly expressive naturalism of third century Attic art; a large statuette (43 cm.), unfortunately corroded, of a nude with the *chlamys* covering its left arm and shoulder inspired by the *Diomedes* of Kresilas, but with live movement, and individual features imperious and massive enough to suggest it to be the full-length portrait of some Hellenistic prince, presumably of the third century B.C.

The Mahdia cargo contained Attic marbles, and the bronzes may also be of the same derivation, in which case we should have a striking example of the diversity of tendencies operating in the art centres of the Hellenistic world in the latest period. But in fact the bronzes from Mahdia are not all of the same period. The largest bears a dotted signature of Boethos of Chalcedon, thus probably (although two artists of the same name are supposed to have existed) by the sculptor who is known by two other quite closely dated signatures, one at Lindos, on Rhodes (about 184) and the other at Delos (about 165: the statue of Antiochus IV). It is well preserved and represents a winged spirit, perhaps Agon, leaning on a herm of Dionysos. We have in the structure of the wing, or rather in the plumage that covers it, a very good indication of date. A bird's wing, (goose's or swan's was the most frequently employed as a model by Greek artists) has basically three zones of feathers: short and close in the first, highest zone, longer in the middle, second zones (secondary quills), and very long at the end, with the primary quills. The naturalistic rendering of the wing, which was achieved in the second half of the fourth century, is richest and most diversified in the Victory of Samothrace, a work

of the opening years of the second century B.C. First, a lively cluster of small feathers of different sizes and laid at different angles, is followed by more regular but unequal and diverging groups of the median feathers, then by the long parallel fronds of the primary quills. In the course of the second century B.C. this living composition, based on nature, becomes simplified into a stylized form. The wing of the *Mahdia Agon* is still quite close to that of the *Victory of Samothrace*, allowance made for the technical difference between marble and bronze, but the detail of the feathers already is stiffer and more regular. The date of this bronze can therefore be fixed satisfactorily within the limits given by the dated signatures of Boethos of Chalcedon, or between 180 and 160 B.C. (Fig. 18).

The little *Eros as a Musician*, however, from *Mahdia*, whose late date is indicated by the softness of its forms, the stereotyped smile and its gaudy finery, has wings which match this style (Fig. 20). There is no really direct contact with nature to be seen in the symmetry of the stiff parallel feathers. The motif has reached the end of its development, about 100 B.C. This development takes place with almost the same rhythm throughout the whole expanse of the Hellenistic world, as may be seen from the winged figures in terra cotta from *Myrina* in Asia Minor or in the great royal eagles on the reverse of Ptolemaic coins in Egypt. The wing of an *Eros* adorning the handle of a hydria from *Myrina* (Pl. IX, 1 and Fig. 19) of the end of the fourth century B.C., may be compared with the wing of any Roman *Victory*. The first, while it is stylized, still carefully differentiates the three zones of plumage, while the second breaks completely with nature both in the general shape and in the detail of the feather (Fig. 21).

The arrangement of the hair gives us another criterion for dating, at least in certain cases, such as the *Hermes of Mahdia* whose short curls are arranged in regular rows, a fashion which appears about the middle of the second century B.C. (Pl. XXXII, 2). Another trait, characteristic of the period, is the custom of folding the drapery in hard crisp creases. A statuette from *Pompeii*, in the *Naples Museum*, which probably represents *Antiochos Grypos* (121-96 B.C.), is another example of this mannerism.



Fig. 18. Wing of the *Mahdia*
Eros-Argon.



Fig. 19. Wing of the *Eros* of *Myrina*
(hydria handle).

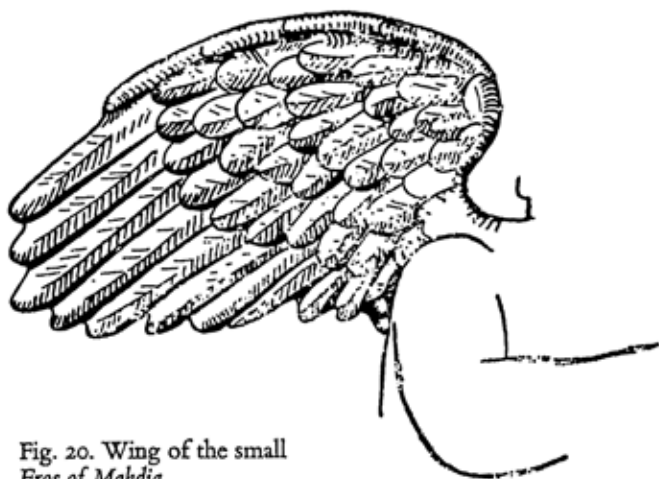


Fig. 20. Wing of the small
Eros of Mahdia.



Fig. 21. Wing of a Roman *Victory*.

To bring into focus the three characteristic stages of the male nude in small Hellenistic bronzes we may compare three representative pieces. These are the *Alexander with spear* in the Louvre, slender and vigorous, which probably takes as model a piece by Lysippus (last quarter of the fourth century); a statuette in the Clercq collection representing Alexander Bala (150-145 B.C.), whose too relaxed pose derives from the *Doryphoros* of Polyclitus; and finally the *Pourtalès Apollo* of the Louvre. This is an academic and archaïcising imitation of the *Cherchel Apollo* whose most likely attribution is to a Greek artist of the Campania at the beginning of the reign of Augustus (Pl. xxxi, 1, 2, 3).

For the female nude, so popular in Syria and Egypt in the Hellenistic period, it is interesting to consider a piece from a workshop of metropolitan Greece, probably in Corinth. This is the *Bather with kekryphalos* in the Munich Museum (Pl. xxxii, 1) which was found at Verria in Macedonia. The hollow casting is skilled, and the piece is generally considered to be a work of the end of the fifth century; but this early dating cannot be defended. Here again the detail of the headdress is a clear indication. The cloth which loosely wraps the hair is very different from the kekryphalos of the fifth century, and is matched on the relief busts of Corinthian mirrors of the first half of the third century. The same is true of the band of finely chiselled hair and the spiral curls which escape from the head covering. The modest pose and quiet naturalism of the modelling agree perfectly with the style of this later period.

Part III

Collections and Collectors



REPRODUCTIONS, IMITATIONS AND FAKES

THE connoisseur of Greek bronzes has more to do than distinguish a fake from an original, though this itself is by no means always easy. There are six headings to consider: 1, Roman replicas; 2, genuinely antique bronzes which have been excessively cleaned and repatinated; 3, antique bronzes restored with pieces not belonging to them; 4, modern copies of antiques; 5, original works imitating the antique, made at any time from the sixteenth century onwards; 6, a real fake, made with the intention of deceiving. These different cases each need separate study.

1. The difficult question of Roman replicas needs detailed examination which will appear in the companion book on Etruscan and Roman bronzes, but a few short remarks may help in distinguishing an original from a replica. Generally, as we have seen, small Greek bronzes are very free imitations of the large sculptures on which they are based. Roman statuettes, especially the finer ones, are much more faithful to their Greek model. The Roman copyist is betrayed even more by his style of work: by the stiffness of his line, and by the dryness, or else, conversely, by the impersonal slackness of his modelling. These characteristics are most noticeable in draperies with rigid folds and sharp ridges.

Two bronzes in the Louvre belonging to the last original expression of Greek art, the neo-classical style of the first century B.C., already foreshadow the manner of the Roman copyists although they are both free transcriptions of fifth-century works. The *Pourtales Apollo* (Pl. XXXI) with the hard articulations of the musculature, and the *Benevento Head* (Pl. XXIX); this latter was for

long thought to be a work of the end of the fifth century B.C., but we have to reconcile ourselves to its being, in its very studied perfection, the masterpiece of the Classical revival at the time of Augustus.

2. The second case has two aspects. On the one hand it is an original, and should have the appropriate qualities of style and technical execution, and the characteristic retouching; on the other hand its patina is modern and should be examined as such.

3. With a restored bronze modern additions are generally easily recognized from the different look of the metal. This difference may be masked by an artificial patina covering both ancient and new parts, so that again a close study of the patina is required. Sometimes, however, restorations are carried out with parts which are themselves antique, but not from the same object. For instance there is a *Gorgon mask* full face, in relief, which was in circulation before the last war, possibly from the lid of a mirror. It was first considered suspect, then authentic; in fact, as the author was able to convince himself, it was made up of one antique part, the top of the head including the eyes, and one modern part, the lower part of the face (reproduced by Zuchner, *Griechische Klappspiegel*, p. 159, Fig. 75). Another instance is a relief from a mirror lid in the Louvre representing *Eros and Dionysos*: the Dionysos had an antique female head in the same style (now separated from the body) which did not belong to him and which had caused him to be taken for an Artemis (de Ridder, *Catalogue des Bronzes Antiques II*, pl. 78, N. 1708).

4. Copies have been made of antique bronzes ever since the Renaissance; they grew more numerous after the discovery of the ruins of Herculaneum and Pompeii, from which innumerable specimens of antique art and industry have been recovered since explorations started in 1738. Naples naturally developed the commerce of copies of antique bronzes, since the majority of the objects found on the two sites are housed in the museum there. Already in the last century the Art Foundry G. Sommer e Figlio, founded in 1857, was publishing a catalogue of near on four hundred models which they were producing either to the original dimensions or reduced in size. A large number of these

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were cast in moulds taken from the original, others were copied free hand. They can easily be obtained at a moderate price.

The author a few years ago was visited by a lady who, though uninformed on these matters was a person of taste. She brought in two bronze statuettes in her possession; one was a Greek original, rather worn but of good quality which had come, unknown to its owner, from a well-known collection; the other, a Neapolitan copy of a bronze from Pompeii to which the years, probably a few decades, had given a reasonably good appearance: it was this one, taken for an antique, which the lady preferred . . .

A fair number of antique bronzes belonging to other museums have been reproduced from moulds or freely copied and can be bought. Bronze copies of antique marbles can also often be found. At the Louvre, however, the casting of ancient bronzes has been forbidden for many years.

It is not always easy, without knowing the original statue, to recognize a modern copy in an antique-looking bronze. It may be in fact quite an old re-casting from the mould of an obscure original. There is the example of a small *Kouros* of the beginning of the fifth century which is in the Modena Museum, a piece not at all well known (Pl. xiv, 2). It has been reproduced, probably since the late eighteenth century, in several copies. To the author's knowledge there are four of them in museums at the present time, two in Italy, one in the Hermitage in Leningrad, and one in the Louvre. The one in the Louvre (which is not on exhibition) came from the collections of Josephine at La Malmaison and is thus vouched for at least as early as the beginning of the nineteenth century. All the copies have a nail under the right foot, like the original, but they have in addition a clumsily restored left foot, which is entirely missing in the original. Further, the re-cast is recognizable by the poor quality of the casting, in the blurred modelling and in the absence of the retouching which gives its character to the original. The patina, on the other hand, at least on the Louvre copy, is deceptive; although it is thin it has the variety of colour of an antique patina and in particular patches of cuprous oxide. This is not surprising, as it is already 150 years old; and it proves that a natural and antique-looking patina is not a

sufficient diagnostic of authenticity. On the whole the majority of modern reproductions have an artificial patina which is uniform and rather coarsely applied with a brush, thus thickening the contours which are already blurred by their re-casting: it is easy to remove this coloured layer with cotton wool soaked in spirit or ammonia.

5. The passion for antiques since the Renaissance has encouraged imitations, some of which are close enough to the originals to put the eye of the connoisseur to the test. One can, in this case, do worse than compare the opinions of specialists both of ancient and of modern art; careful study of the style, combined with examination of the colour of the bronze and of the patina, is generally enough to solve the problem. It sometimes happens that neither expert will acknowledge the object as belonging to his sphere; it is then most probably a bastard and characterless fake.

6. There is no infallible method of revealing fakes. A bad-looking patina, or no patina, bad quality casting or the mediocrity of the modelling, an unusual type or the fact that it fits into no definite series, a false or suspect inscription are none of them sufficient grounds for dismissing a bronze as a fake. Many modern fakes are of brass, but the Romans used this alloy (in which zinc is present in a higher proportion than tin). Thus every point must be dealt with carefully and attention must be paid to the general look of the object.

We have already seen how circumspect one needs to be in deducing age from patina. It is easy to obtain a natural patina of good colour which can pass for antique in a relatively short space of time. For example a female bust, certainly and doubtless innocently inspired by the antique, but by its style quite certainly a work of the second half of the nineteenth century, spent perhaps half a century, no one knows how it got there, in a disused cess-pool; it came out with a wonderful emerald green patina. Despite some contrary opinions this patina itself confirms the verdict of the style: the perfect uniformity of colour and surface forbids its being an antique. Thus as a rule a recent patina, either natural or artificial, can be recognized by its uniformity, but it must not be forgotten that an antique bronze may have been thoroughly

scraped down and repatinated. A last important point: some laboratories can conduct a metallographic examination on a polished surface by micro-photography; the polishing is done on a ridge of the bronze where it is not seen. The examination can indicate whether the patina penetrates the bronze with internal corrosion, and is therefore ancient, or if it is superficial and does not penetrate, in which case the patina is modern.

The majority of Greek bronzes have correct proportions and good modelling even if the forms are not rendered in great detail. Of course some unskilful pieces came from workshops far from the large centres and we have commented already on the disproportions characterizing many figurines from Magna Graecia notably Locris. But it is very rare for a Greek bronze to lack clarity of contour and plane. Most fakes have flabby and uncertain forms; their makers, to make them look more real, use acid, and its corrosive and disparate effect is usually recognizable. Fakes of Archaic bronzes, however, which are quite frequent since they are in fashion and apparently easier to imitate, regularly have disparities of style between the different parts of the body: the drawing of the head is appropriate to an earlier or later period than that of the torso and usually the liberties taken with the anatomy are different from those which the Greek artists allowed themselves. Lastly, on fakes the retouching after the casting is either absent or inopportune, and they never have the repairs (such as were described in the chapter on technique) of casting faults which are so usual on ancient bronzes.

Fakers usually imitate an antique piece so that the purchaser is not put on his guard; but, since straightforward reproduction would be too easily recognized the fake always differs from its model in several details, mostly of decoration or the attributes held by the personage represented or his attendant. Often the drapery is unduly and improbably complicated, the hair is dressed anachronistically or its style misunderstood, a vase will be in a later style, or the attribute will be in an unusual form or unrelated to the subject. Among the fakes in the store-rooms of the Louvre there is a nude *Aphrodite* at her toilet, with the knot of hair in place on the nape of her neck, yet the left hand is holding up a loose strand of

hair and the right hand holds out an apple at the height of her face instead of a mirror. Another example is a sort of *nymph* in the Durand collection. Her left leg is placed on a duck, and she stands pouring liquid out of a handleless jug into a shell, both of which are incongruous in form. This concern to give new detail to the antique models, in these examples reaching, unintentionally, almost to caricature, sometimes betrays itself in the invention of unacceptable variants of the best known types. These are not difficult to spot.

One must, however, guard against a systematic dismissal of objects because their type and style are unfamiliar and do not fit into any classification. It is not by any means rare that scientifically conducted excavations bring to light pieces which, were they submitted to them without information as to origin, most experts would consider suspect. Among the Louvre collection of pre-Hellenistic Cretan objects there is a perfectly genuine statue of a worshipper (Pl. v, 2) which spent many years of disgrace in the reserves, since it had been acquired (at a very modest purchase price) before the first scientific excavations in Crete; the pose, forms and style of modelling seemed at that time wholly foreign to ancient art.

Lastly it should be remembered that a false inscription does not mean a certain condemnation of the object unless it was engraved on the model before casting. If it is engraved cold on to the bronze it may be a modern addition and independent of the object, and the bronze should be judged on its own quality, regardless of the inscription, as an uninscribed piece.

CHAPTER TWO

THE PRESERVATION AND RESTORATION OF ANTIQUE BRONZES

IT may seem extraordinary that bronzes should have been preserved in the earth for thousands of years without the porous parts being encroached upon by destructive salts. This preservation is the result of an equilibrium established between the object and the milieu in which it was buried, and as soon as the bronze comes in contact with the air and is placed in a new environment this equilibrium is destroyed and the bronze's preservation is threatened, and it should be treated as soon as possible.

Many collectors have an almost obsessive respect for the 'excavated object' and wish to preserve it in the state in which it leaves the earth. In fact it is very rare that an antique bronze is dug up with its skin smooth and its patina undamaged; it is generally covered with calcareous accretions, and indeed the hardness of this rough envelope is a sign of authenticity, insufficient by itself, but valid. Even if this crusted object seems healthy it should be cleaned, for the accretion may hide corrosions, and however small, they increase the risk of the object's contracting 'bronze disease'. One way of cleaning is to plunge the bronze into a solution of five per cent polysodium metaphosphate, sold commercially as *calgon*. It should remain soaking in this solution until all the accretion has dissolved; then a spatula or wooden point can be used very gently to remove the lumps. A long time is sometimes needed for this. The head of a statue, found in the excavations on the Agora at Athens was soaked for five weeks in distilled

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water, and then for two months in a solution of two per cent sodium hydroxide.

Another simple cleaning and protective process is best described in the words of its inventor, M. Dayet:

'The object is first washed in *distilled* water; and, while in this bath it is brushed very gently with a soft brush. In this way the greater part of the impurities sticking to the patina are removed. Old tooth brushes are very useful for this purpose.

'The object should now be dried and, so to speak, disinfected. If one has no special oven I estimate it sufficient to keep it for ten minutes in 90° alcohol, and then to dry it thoroughly.

'To harden the patina it is soaked for a few minutes in linseed oil. This makes the patina firmer, and it is then left to dry for 24 hours.

'The object is then ready for varnishing: an essential operation which insures the preservation of the bronze, creating a barrier between it and the air which is impregnable to oxydization and damp. It is not recommended to use any commercially sold varnish. The firm 'Marcolac' has prepared a product specifically for bronze called 'cryptolac'. This is sold in tins with a vaporizer in the stopper. It dries in two or three minutes.

'One last piece of practical advice. Do not point the opening of the vaporizer directly at the object; otherwise too much varnish is discharged at it and makes ugly lumps. One should stand with it at about 50 cm. from the object and aim to one side, giving a quick flick at it with the vaporizer. This obtains a very thin film of varnish which although almost invisible is perfectly effective.'

If the bronze is diseased it is best to hand it over to the care of a special laboratory.

'Bronze disease' is when cuprous chloride turns into cupric chloride (atacamite) under the action of oxygen. This salt is the mortal enemy of bronze, it develops in porous or corroded places, showing as green powdery patches. The chloride spreads under the skin of the bronze from the original patch and penetrates very deep.

A short account of the methods at present used to deal with this disease may be of use.

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If an object is badly affected and there is no hope of saving the patina the choice is between two radical treatments, one electrochemical, the other electrolytic. They both need special equipment and care and can only be carried out under laboratory conditions.

In the special case of Greek bronzes these drastic methods can nearly always be avoided. Since the patina is part of the skin of the bronze and is an element of its beauty it must only be sacrificed in very extreme cases.

There remains, therefore, for Greek bronzes which are diseased, a treatment combining chemical and mechanical means. First they are immersed, it may be for a long time, in a solution which varies according to the laboratory. Then they are washed in boiling distilled water for several hours. The patches of chloride are removed with an appropriate instrument (it may be thermocautery). Lastly the bronze is covered with protecting varnish after being dried in a stove. In ideal circumstances the drying should be done in a vacuum and the impregnation under pressure, but these operations require the special equipment used in the electrical industry.

Enough has been said of the treatment of bronze disease to show that it is best entrusted to a specialized laboratory. It should be remembered that even after careful treatment this disease may recur; a treated bronze should be kept under observation and first and foremost protected from damp. A Greek bronze head in the British Museum, beautifully patinated, gave no signs of the disease until suddenly points of corrosion appeared and had to be appropriately treated: it was then found that the wall against which the head had stood on exhibition had contracted a damp patch.

CHAPTER THREE

PUBLIC AND PRIVATE COLLECTIONS

HISTORICAL RÉSUMÉ

GREEK bronzes were prized by Roman art lovers who competed with vast sums for the best pieces, particularly of 'Corinthian' bronze vases and statuettes. Most of those brought to Italy after the conquest disappeared, and when the revival of taste for the Antique occurred little else than Etruscan and Roman bronzes was available for the scholars and princes to collect and admire, as is manifest in the collections of Lorenzo dei Medicis and Pope Paul II.

The first mention of antique bronze figurines and objects in the Cabinet du Roi de France dates from 1608. In 1660 Gaston d'Orleans, who collected antiques, especially gems and medals at the time when the illustrious Peiresc was doing the same, bequeathed his collection to his nephew Louis XIV. In the following years the king bought several collections. There were, no doubt, very few Greek bronzes among them, but at least one is known which figures in the Cabinet du Roi as far back as the reign of Louis XIV and is one of the greatest treasures of the Louvre collection, the *Ephebe* No. 183, thought to have come from the workshop of Polyclitus. It is surprising to find it in the Louvre, since the collections from the Cabinet du Roi went into the Cabinet des Medailles of the Bibliothèque Nationale, and the Louvre only received pieces which had been left in the Garde-Meuble (Inventory of the Crown Diamonds, 1791). These consisted of only a few authentic statuettes, of which this No. 183 is outstanding, and a number of mediocre imitations.

Indeed, the great collections of the eighteenth century, like those of the seventeenth, even the Caylus which came to the Cabinet du Roi in 1762, or the Sloane and Hamilton collections in England, had very few Greek bronzes, or even none at all. The objects amassed by antique lovers all came from Italy. Even the large Payne Knight collection which the great English connoisseur donated to the British Museum at the beginning of the nineteenth century contains only a few Greek pieces. More can be found in the two successive collections of the Chevalier Durand (sales of 1825 and 1836). These were the most important collections of the period and the first was acquired almost entirely by the Louvre; even so the majority, if not all of the Greek bronzes collected by the Chevalier Durand came from Italy (mainly Magna Graecia) and the same is true of the few Greek pieces in the Campana collection.

Not until the second half of the nineteenth century is there a noticeable increase in bronze objects found in Metropolitan Greece, Asia Minor, Syria and Egypt; and it is in this half century and the beginning of the twentieth that the famous collections were formed which enriched the museums, either by donation or purchase: de Witte, Janzé, de Luynes, Oppermann (Cabinet des Médailles, Paris), Dutuit (Petit-Palais, Paris), Gaudin (Louvre), Castellani (British Museum), Saborov (Berlin), Carapanos (Athens National Museum), Scheurleer and von Bissing (Allard Pierson Museum, Amsterdam). To these must be added the collections which were sold publicly and dispersed between the museums and private houses: Gréau, Hoffmann, Pourtalès, Tyszkiewicz, Piot, Fouquet . . .

THE PRESENT SITUATION

Private Collections

The only large private collection of antique bronzes today is the Clercq (the Count and Countess Henri de Boisgelin), mainly a collection of pieces acquired in Syria, of Hellenistic and Roman date. It is strange that the great antique dealers who used to keep large reserves of pieces of quality have disappeared, perhaps

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because they cannot now tie up such enormous capital sums. The number of buyers has not diminished however, for while there are certainly fewer than there used to be who can afford to form and maintain a collection in France, England, Italy, Germany and Russia there are correspondingly more in Switzerland and the United States of America. But present-day collectors interested in antique art are on the whole eclectic, they seek the '*bel objet*'; some concentrate on 'early periods'; others enjoy change, they resell, exchange, buy again. Thus nowadays the number of Greek bronzes is small in any of the private collections made up entirely or partly of antique *objets d'art*.

In a recent exhibition held at the Fogg Art Museum in Cambridge, Massachusetts (*Ancient Art in American Private Collections*, Dec., 1954-Feb. 1955) it was possible to see pieces of quality lent by American collectors, notably Walter C. Baker, S. Morgenroth and G. Ortiz.

Museums

We have just seen, briefly, how private collections contributed to the formation of museum collections. Some of these have been turned into public museums at the behest of their owners. Among those which contain Greek bronzes are the Musée de Mariemont (Fondation Warocqué), in Belgium; the Dumbarton Oaks Institute (Bliss Foundation) in Washington; the Pierpont-Morgan Library, New York and the Walters Art Gallery, Baltimore.

The largest and finest series of Greek bronzes are, not unnaturally, in Greece itself. The National Museum in Athens, which has the finds from the Acropolis and those collected by the Archaeological Society as the basis of its collection, has for long taken in charge a good proportion of the pieces found at the various excavations conducted on Hellenic soil, either by the Greek archaeological service or foreign missions. But the founding of specialized and well-cared-for museums in the principal towns and on the sites of large excavations has allowed a decentralization which will certainly increase.

The National Museum at Athens is at present by far the richest

PUBLIC AND PRIVATE COLLECTIONS

in Geometric and Archaic bronzes, and the submarine discoveries at Histiaea, Marathon and Anticythæra have added incomparable masterpieces of the Classical and Hellenistic periods. The Minoan bronzes found in Crete are in the Heracleon museum (Candia), the bronzes from the Heraion at Samos in the Samos museum, those from Delphi are or will be in the Delphi museum, and, although the best pieces discovered at Olympia in the great German excavations of the end of the last century remain at Athens, the very important new finds from the excavations of the stadium are preserved in the Olympia museum. In Athens itself, the harvest from the large American undertaking on the Agora is now on view in the Portico of Attalus which has been reconstructed and turned into a museum.

In Turkey the same process of decentralization is planned and already taking place, but at present the majority of bronzes found on Greek sites in Thrace and Asia Minor are still assembled in the Greco-Roman museum at Istanbul.

In Italy the largest finds of bronzes were in the necropolis of Epizephyrian Locris; the majority of them are preserved in the new Reggio Museum (Calabre). The other museums in Magna Graecia and Sicily are not so rich. The new Paestum Museum has a fine series of Archaic vases, however, and there are some fine Hellenistic statuettes, vases and utensils in the Naples Museum among the numerous, mostly Roman, bronzes from Pompeii and Herculaneum. There are few authentic Greek pieces in the other Italian museums, which are, of course, rich in Etruscan and Roman bronzes. Even the *Idolino* in Florence is now plausibly denied a Greek origin.

The museums of Beirut, Damascus, Alexandria and Cairo have few Greek bronzes, and those are almost exclusively Hellenistic; it is to be hoped that they will soon be enriched by the excavations now in progress or planned.

Outside the countries where the national collections draw directly on excavations, the museums, benefiting sometimes from large private collections, have to make their acquisitions from the antique market; thus the origin of the objects acquired is generally uncertain.

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In Europe three museums are especially rich in Greek bronzes: the Antiquarium of the Berlin Staatliche Museum, the Louvre and the British Museum. In Berlin the most important series are the Geometric bronzes, the 'duplicates' from the German excavations at Olympia allowed to them by the Greek Government, and the Archaic Arcadian statuettes. The Louvre and the British Museum collections represent in a roughly similar manner the different typological and chronological series treated in this book.

The Kunsthistorisches Museum in Vienna, the Hermitage in Leningrad and the Munich Antiquarium have smaller collections. The museums of Sofia and Belgrade, and quite a number in Italy, Germany, France and England have a few Greek bronzes of good quality.

In the United States the Metropolitan Museum in New York and, less completely, the Museum of Fine Arts in Boston, can show, alongside their choice pieces, a comparatively full survey of bronze art in the Greek world. There are also a few fine specimens in several smaller museums.

Unfortunately there is not at present a *Corpus* of Greek bronzes, and well-illustrated scientific catalogues are still very few (see Bibliography).

CHAPTER FOUR

THE MARKET IN BRONZES

THE export of Greek bronzes manufactured in the workshops of metropolitan Greece and its colonies, mainly the cities of Magna Graecia, began at least as early as the seventh century B.C. Two famous finds, among others, one at Trebenischte in Illyria and the even more impressive one at Vix in Gaul show the extent of this trade, which spread all round the shores of the Mediterranean.

Greek bronzes, however, did not travel nearly so far from the cities which produced them as the painted terra cotta vases which were so extraordinarily popular with the Etruscans. Apart from a very few statuettes the export trade was mainly in vases and toilet articles, at any rate before the beginning of the Roman pillaging. This pillaging nurtured in the Romans a taste for collecting Greek *objets d'art*. Silver was the most sought after but bronzes too were collected; and since the majority of the collectors were recruited from the new rich who were more interested in displaying their wealth than in showing their taste, fakes proliferated. Thus Martial, addressing an unknown collector in an epigram, says ironically that 'his friends are as authentic as his works of art'.

Turning to modern times, it was explained in the previous chapter that Greek bronzes hardly figure in public or private collections before the second half of the nineteenth century. Today they are much sought after.

We have only the scantiest clues as to the prices they commanded in ancient times. For the Greek period the only precise information is for two bronze portrait statues, one made at the end of the fourth century, the other in the second century B.C.; the price mentioned in the honorific inscriptions is the same for both:

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a half-talent, which is thirty mines or three thousand drachma. It is not easy to translate this sum into modern values. Although the value of the drachma diminished considerably between the fifth century and the Hellenistic period it cannot be equated with the shilling or any modern coin. In any case the proportion of the payment which went to the artist was very small, for even when he was famous he was only regarded as an artisan. The sophist Protagoras boasted that with his teaching he earned ten times more money than Phidias. The price of bronzes was mostly composed of the cost of the metal, its manufacture, labour and transport.

By the Hellenistic period the situation was different. The fame of great artists had been given the sanction of learned treatises, and classical masterpieces sold at high prices. Pliny gives the price paid for the *Diadumenos* of Polyclitus as 100 talents (about £100,000), but he does not name the buyer; such a price is inconceivable before the Hellenistic period. It was paid by one of the kings of Pergamos for a painting by Aristides of Thebes. Later, rich Romans like Crassus, Lucullus and Caesar did not hesitate to pay similar or higher prices for works of less value. Roman taste is curiously illustrated by the story Pliny tells of a bronze bitch licking its wounds, which stood in the *cella* of Juno on the Capitol; no sum of money seemed adequate to guarantee this wonderful work 'which perfectly imitates reality', and the guardians of the temple were answerable for it with their heads.

In modern times the fluctuations in price since the mid-nineteenth century when Greek antiquities started coming on the antique market have of course reflected changes in taste. A few examples give the idea: the *Apollo of Piombino* came from Italy in 1834 at a price of 16,000 *francs d'or*; in modern money equivalent to about £5,000: about a tenth of the price it would now fetch. Although this example is exceptional it already shows what was to be the dominant taste until about 1920 and even later: Hellenistic bronzes were worth more than Archaic. Nowadays it is the other way round; a Syrian statuette of *Aphrodite*, of moderate quality, was bought in 1924 by an antique dealer for 191,000 francs, about £7,000, and more than seven times its

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present value on the market. As against this the magnificent *Zeus* from Dodona (Pl. xxii, 1) in the severe style, together with other fine quality Dodona bronzes at similar prices, was acquired for 1,000 *francs d'or*, £300 today; art lovers can imagine what price it would fetch now. Two years ago a Geometric horse fetched more than £1,000 in a public sale; half a century ago it was worth between 100 and 200 *francs d'or* (£30 to £60). These few examples will show the present trend in the Greek bronze market after the fluctuations of the last fifty years.

DISPLAY OF COLLECTIONS

MUSEUM curators and collectors do not have exactly the same requirements. Moreover, the size, arrangement and illumination of the space at their disposal may vary considerably. Conditions rarely favour an ideal presentation of the objects, even when the building has been expressly designed to show certain pieces at their best; and of course taste changes from one generation to another and differs according to climates and local customs. In the great museums, bronzes are generally exhibited on their own, one or more galleries being devoted to them. This is perhaps not the best method. Some American museums, and quite recently the Victoria and Albert Museum, have adopted the principal of mixing techniques: ceramics, terra cottas, marbles and bronzes of the same period all exhibited in the same gallery. Such variety is pleasing to the eye and makes instructive comparisons possible. Nevertheless this arrangement raises difficult problems of placing, through differences of size and colour. Above all, attention must be given to the extreme sensitivity of bronze to damp. As a rule, except perhaps in very dry climates, bronzes should not be exhibited on the ground floor. Their conservation requires a dry atmosphere and constant temperature.

Top lighting, or oblique lighting from above is not unsuitable for bronzes modelled in the round, but lateral lighting, from a fairly high level, gives them more life. The display of antique bronzes in the Louvre, arranged after the war, in a gallery with high windows facing east and west has proved satisfactory. Since the illumination is always weaker on one side than the other it

DISPLAY OF COLLECTIONS

brings out the relief without casting dark shadows, and as the daylight moves different aspects of the same objects are accentuated.

The position and direction of artificial lighting depends on the shape, size and placing of the cases. In a museum almost the only way of lighting the central cases and the large wall cases is to place the source at the top of the case between two sheets of ground glass; thus the source of light is almost invisible.

Cases built into the wall and usually of small size are nowadays preferred by private collectors and are also used in museums. They usually have masked illumination from the sides and the brilliance can be regulated independently at each side. At the present moment incandescent electric bulbs are to be preferred, but no doubt progress in the colouring of fluorescent tubes will make this form of lighting acceptable.

Objects which must be seen from all directions, especially statuettes, gain from being placed in central cases. The finest pieces are best exhibited alone under glass covers built of rectangular sheets of glass gummed at the edges and without metal mounts.

Arms, utensils, etc. look well in wall cases, and small objects may be suitably displayed in built-in wall cases. When the back of a piece in a wall case has to be seen it can be shown by a mirror. A table case with a sloping top is best for objects decorated with engraving or in relief, such as fibulae, appliqués, vase handles, and box mirrors.

Coloured backgrounds are now out of fashion; a light beige stuff pleases modern taste, although sometimes the effect produced by placing a fine antique bronze against a crimson velvet is not to be despised.

Plinths for bronzes should not distract from their shapes. The material of the plinths can be varied to avoid monotony. Red or 'antique green' and still more perhaps the lightly tinted limestone of Comblanches are now usually preferred to the yellow marble of Siena which was a great favourite in the last century. Some vases and utensils, handles and appliqués require a mount adapted to their shape, and as inconspicuous as possible. Perspex is a good material for these requirements, although it calls for taste, care and ingenuity on the part of the technician.

As a general principle, each category of objects should be displayed in chronological order. When large collections are exhibited, of course, it is advantageous to make divisions by regions or schools within the chronological classification, wherever this is possible. In museums near ancient sites which are the find places of groups of contemporary objects of various kinds, especially tomb contents, it may be desirable to reconstitute one or more of these groups. This is rarely appropriate in museums and collections which are not near excavation sites, an honourable exception, however, is the funeral furniture of the tomb of Sala Consilina, from the Detuit Collection in the Petit Palais. On the other hand, in some instances, there may be reason for preferring a typological to a chronological and geographical grouping, in order to show the development of forms.

Pouring vessels, or candelabra might be treated thus.

Labels consisting of a transparent plastic material are sometimes difficult to read; this can be overcome by roughening the underside. Visitors arriving in a museum should be informed on the layout of galleries and the classes of objects displayed by a plan, showing the order in which they are displayed and the civilizations to which they belong.

No arrangement can quite satisfy at once the historian, archaeologist, art-lover and collector, but each of these, studying from his own point of view one of the marvellous pieces which Greece has bequeathed to us can repeat Goethe's dictum: 'This people has been able to extract from a thousand roses a little flask of perfume'.

BIBLIOGRAPHY

I. GENERAL WORKS

- A. DE RIDDER: *Les bronzes antiques* (on the Louvre collection), 1913.
K. A. NEUGEBAUER: *Antike Bronzestatuetten*, 1921.
W. LAMB: *Greek and Roman Bronzes*, 1929.

II. CATALOGUES OF COLLECTIONS

- E. BABELON and J. A. BLANCHET: *Bibliothèque Nationale*, Paris, 1895. — M. BIEBER: *Cassel*, 1915. — P. DEVAMBEZ: *Stamboul* (Large bronzes), 1937. — C. C. EDGAR: *Cairo Museum*, 1904. — FAYDER-FEITMANS: *Musée de Mariemont* (Bronzes by Lepalus), 1952. — H. C. VAN GULIK: *Allard Pierson Museum at Amsterdam*, 1940. — D. KENT HILL: *Walters Art Gallery*, Baltimore, 1949. — K. A. NEUGEBAUER: *Berlin Antiquarium*, I, 1931; 2, 1951. — P. PERDRIZET: *Collection Fouquet*, 1911. — G. M. A. RICHTER, *Metropolitan Museum*, New York, 1915. — A. DE RIDDER, *Musée de Louvre* (2 vol.), 1913. — A. DE RIDDER: *Société archéologique, Athènes*, 1894. — A. DE RIDDER: *Bronzes trouvés sur l'Acropole d'Athènes*, 1896. — A. DE RIDDER: *Collection de Clercq*, III, 1905. — E. VON SACKEN: *Antiken-Cabinet in Wien*, 1871. — K. SCHUMACHER: *Karlsruhe*, 1890. — J. SIEVEKING: *Sammlung Loeb*, 1913. — R. THOUVENOT: *Madrid*, I, 1927. — H. B. WALTERS: *British Museum*, 1899.

III. MAIN EXCAVATION REPORTS

- A. FURTWÄNGLER: *Olympia*, IV, 1890 (The bronzes excavated since 1937 are described in the *Olympia Berichte*). — P. PERDRIZET: *Fouilles de Delphes*, V, 1908. — B. D. FILOW and K. SCHKORPIL: *Trebenische*, 1935. — R. JOFFROY: *Le trésor de Vix*, 1955.

IV. TECHNIQUE

Equipment and methods of casting

- S. CASSON: *The Technique of Early Greek Sculpture*, 1933. — C. PICARD: *Manuel d'archéologie grecque, la Sculpture*, 1937, I, p. 174-87. — K. KLUGE and K. LEHMANN-HARTLEBEN: *Die antiken Grossbronzen*, 3 vol., 1927 (vol. I: *Die antike*

BIBLIOGRAPHY

Erzestaltung, by Kluge). — L. LEHMANN-HARTLEBEN: *Corolla Curtius*, 1937, 2, p. 1 sqq. — H. MARYON: *Metal-working in the Ancient World*, *American Journal of Archaeology*, 53, 1949, p. 93 sqq.

Technique of repoussé metal work

D. BURR: *Hesperia*, 8, 1939, p. 285 sqq. — G. M. A. RICHTER: *American Journal of Archaeology*, 45, 1941, p. 375 sqq. — D. KENT HILL: *American Journal of Archaeology*, 51, 1947, p. 248 sqq. — W. ZÜCHNER: *Jahrb. d. Instit.*, 65-6, 1950-51, p. 17.

V. VESSEL SHAPES AND IMPLEMENTS

General

K. A. NEUGEBAUER: *Bronzegerät des Altertums*, 1927.

Armour

Cuirasses: HAGEMANN: *Griechische Panzerung*, I, 1919, *Olympia*, IV, and *Olympia Berichte*. — **Helmets:** E. KUKAHN: *Der griechische Helm*: J. MARCADÉ: *Bull. Corresp. hellen.*, 1949, p. 421-36: P. AMANDRY: *Ibid.*, 1949, p. 437-46. — **Shields:** *Olympia Berichte*: E. KUNZE: *Kretische Bronzereliefs*, 1931, and *Olympische Forschungen*, II, 1950.

Harness

E. PERNICE: *56tes Winckelm. Progr. Berlin*, 1896.

Mirrors

Hand and pedestal mirrors: S. PAPASPYRIDIS KAROUZOU: *Studies David Moore Robinson*, 1951, p. 565-87: **Box-mirrors:** W. ZUCHNER: *Griech. Klappspiegel*, 1942: G. OIKONOMOS: *Annuario Sc. ital. At.*, 24-6, 1950, p. 133-51. **Tripods and Cauldrons**

K. SCHWENDEMANN: *Jahrb. d. Instit.*, 36, 1921, p. 98-185: *Olympia*, IV: *Delphes*, V, p. 59 sqq.: U. JANTZEN: *Griech. Greifenkessel*, 1955: P. AMANDRY: *Studies Hetty Goldman*, 1956, p. 239-60.

Kraters, hydriae, oenochoae, amphorae

Trebenische: *Vix*: K. A. NEUGEBAUER: *Röm. Mitteil.*, 38-9, 1923-24, p. 341 sqq.: VALLET and VILLARD: *Bull. Corresp. hell.*, 79, 1955, p. 50 sqq.: D. KENT HILL: *American Journal of Archaeology*, 62, 1958, p. 193 sqq.: E. PERNICE: *Hellenist. Kunst in Pompeji*, IV, 1925.

Bowls, dishes and basins

E. KUNZE: *Kretische Bronzereliefs*, 1931: P. DEMARGNE: *La Crète dédalique*, 1947, p. 217 sqq.: *Trebenische*: M. J. MILNE: *American Journal of Archaeology*, 1944, p. 26. sqq.

Paterae

MOGENS GJØDESEN: *Acta archaeol.*, 15, 1944, p. 101-187: P. AMANDRY: *Monuments Piot*, 47, 1953, p. 47-70.

BIBLIOGRAPHY

Situlae

SCHRÖDER: 74tes Winckelm. Progr. Berlin, 1914.

Rhytons, figure-vases

B. SVOBODA and D. TSONTCHEV: *Neue Denkmäler antiker Toreutik*, Prague, 1956.

Vases, lamps and candelabra

E. PERNICE: *Hellenist. Kunst in Pompeji*, IV, Gefässe und Geräte, 1925.

Furniture appliqués and ornament

C. L. RANSOM: *Studies in Ancient Furniture*: K. A. NEUGEBAUER: *Athen. Mitteil.* 57, 1932, p. 29 sqq. (beds).

VI. PRE-HELLENIC PERIOD

Crete and Mycenae

EVANS: *The Palace of Minos at Knossos*, II, p. 623 sqq. (vases); III, p. III sqq. (incrusted daggers): V. MÜLLER: *Frühe Plastik in Griechenland und Kleinasien* 1929, p. 38 sqq. (statuettes).

VII. GEOMETRIC AND EARLY ARCHAIC PERIODS

General

F. MATZ: *Die geometr. und die früharch. Form*, 1950: E. KUNZE: *Athen. Mitteil.*, 55, 1930, p. 143 sqq.

Special subjects

MARINATOS: *Bull. Corresp. Hellen.*, 60, 1936, p. 63 (Sphyrelaton): E. LANGLOTZ: *Corolla L. Curtius*, 1937, I, p. 60 sqq. (Crete): R. HAMPE: *Frühgriech. Sagenbilder*, 1937, (Boetian fibulae).

VIII. LATE ARCHAIC AND EARLY CLASSICAL PERIODS

General

E. LANGLOTZ: *Frühgriech. Bildhauerschulen*, 1927: V. H. POULSEN: *Der strenge Stil*, *Acta archaeol.*, 8, 1937.

Special studies

Sparta: C. KAROUZOS: *Charites, Studien zur Altert-Wissensch.*, 1956, p. 33-7. - **Arcadia:** W. LAMB: *Brit. School Annual*, 27, 1925-26, p. 133 sqq. - **Corinth:** PAYNE: *Necrocorinthia*, 1931, p. 210 sqq., and *Perachora*, 1940, p. 123 sqq. - **Athens:** A. DE RIDDER: *Bronzes de l'Acropole*. - **Samos:** E. BUSCHOR: *Altsamische Standbilder*, 1934. - **Magna Graecia and Sicily:** U. JANTZEN: *Bronzeworkstätten in Grossgriechenland und Sizilien*, 1937.

IX. CLASSICAL PERIOD

(Fifth and Fourth Centuries)

See general works and catalogues listed above. There is no comprehensive work on the Greek bronzes of the Classical period, only special studies, particularly the following:

BIBLIOGRAPHY

K. A. NEUGEBAUER: 87tes *Winckelm. Progr. Berlin*, 1927, *Antike Plastik Amelung*, 1928, p. 156-61 (notes on the distinctive characteristics of Greek originals in relation to Roman replicas). *Jahrb. d. Instit.*, 49, 1934, p. 162 sqq. (fourth century). - J. CHARBONNEAUX: *Monuments Piot*, 38, 1941, p. 40 sqq. (School of Polyclitus). - E. KUNZE: 109tes *Winckelm. Progr. Berlin*, 1953, p. 13 sqq. (pre-Classical).

X. HELLENISTIC PERIOD

The same applies to this period. However, see catalogues of the le Clercq Collection (Syrian bronzes) and the Fouquet Collection (Egyptian bronzes), and the following additional works:

G. KRAHMER: *Röm Mitt.*, 46, 1931, p. 130 sqq. (after Lysippus). - K. A. NEUGEBAUER: *Pantheon*, 6, 1933, p. 56 sqq. (Pergamos). - J. CHARBONNEAUX: *Monuments Piot*, 46, 1952, (influence of Pergamos). - A. MERLIN and L. POINSOT: *Monuments Piot*, 17, 1909, p. 29 sqq. and 18, 1910, p. 5 sqq. - C. PICARD: *Karthago*, III, 1952, p. 83 sqq. (Mahdia bronzes.)

XI. PRESERVATION AND RESTORATION

H. J. PLENDERLEITH: *The Conservation of Antiquities and Works of Art*, 1956, p. 232 sqq. - E. SALIN and A. FRANCE-LANORD: *Bull. du Laborat. du Musée du Louvre*, 2, 1957, p. 9 sqq. (Laboratory of the Musée Lorrain, Nancy).

XII. PRICE OF BRONZES IN ANTIQUITY

A. DE RIDDER: *Revue archéologique*, 1915, p. 97 sqq.

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